UCDAVIS

Design and Construction Management

Small, Medium, Large, Extra-Large

Student Housing Growth at University of California, Davis

Jim Carroll, Associate Vice Chancellor & University Architect June 24, 2021





RESILIENCY: CONNECT & REJUVENATE

Agenda

- The Baseline
- The Story
- The Data
- The Design Solutions
- The Construction
- The Results
- The Next Chapter

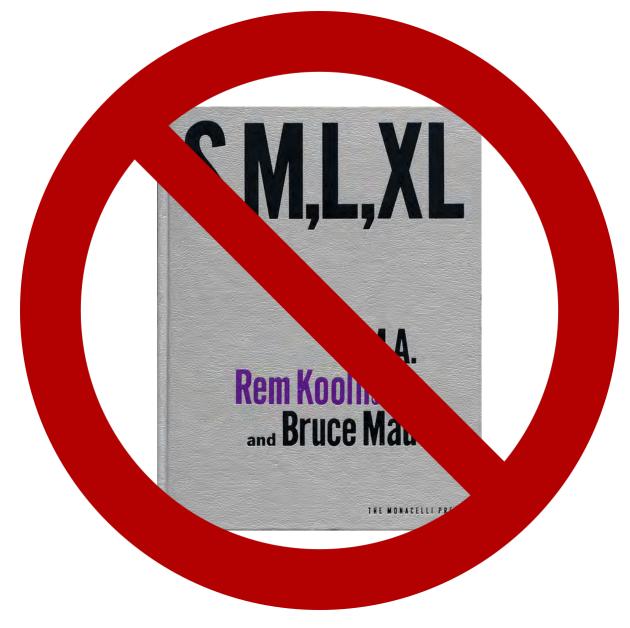




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Agenda

What today is not...





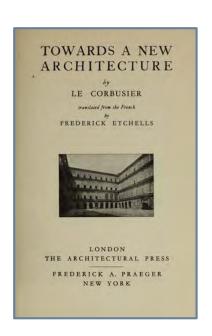


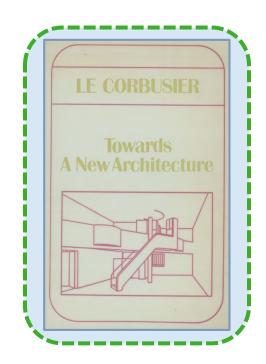
...Architecture is the masterly, correct and magnificent play of masses brought together in light. Cubes, cones, spheres, cylinders, or pyramids are the great primary forms which light reveals to advantage...

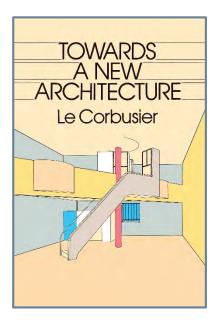


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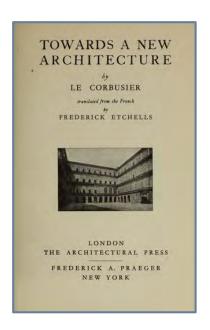
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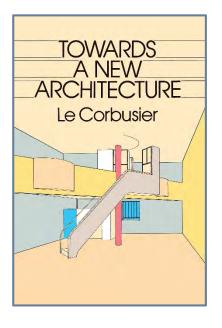
reveals to advantage...

1927





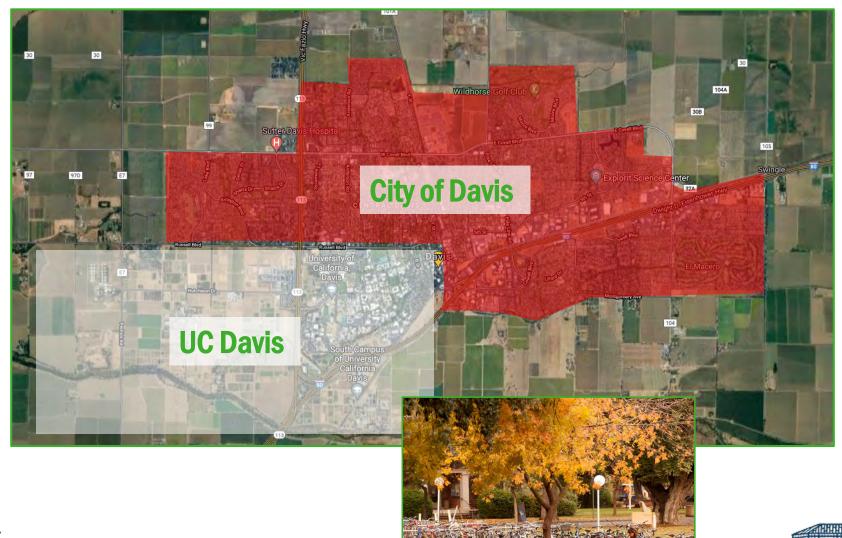








- UC Davis
 - 40,000 Students
 - 5,300 Acres
 - University Farm
 - Ag and Vet
 - Activist History
- City of Davis
 - 68,543 Population
 - 10 Square Miles
 - Agricultural History
 - College-town MOU







UC Davis

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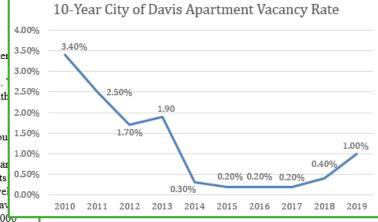
In 2018, when the Regents approved the West Village transfer student housing project, The Green, the University also entered into a Monorandum of Understanding (MOU) with Yolo County and the City of I axis. The MOU committed the campus to build more housing for students and guarantee to house 100 percent of any new student enrollment growth.

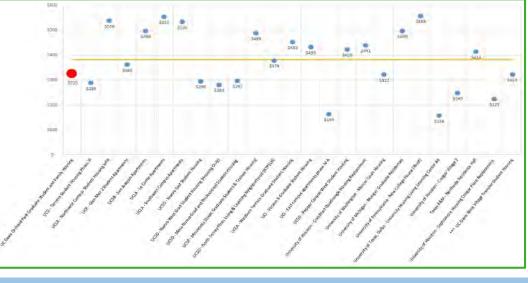
The current and still increasing demand for on-campus student housing has several driving factors, including challenging off-campus market conditions and ongoing potential enrollment increases (the adopted 2018 Long Range Development Plan (LRDP) includes potential enrollment increases of 3,440 to reach 39,000 students on the Davis main campus by 2030). Orchard Park site is proposed for redevelopment to serve graduate students and students with families, thus addressing a significant portion of the current and projected demand.

The LRDP project's housing 49 percent of students in on-campus housing and increasing hou capacity to accommodate approximately 8,000 additional students. In 2019-20, the campus housed approximately 27 percent of all students in on-campus housing. The proposed Orchar Park project will deliver a total of 1,549 beds, of which 1,406 are expected to be for students 143 for non-student partners and children. With the new student beds at Orchard Park, as we other housing projects currently under construction, the on-campus housing capacity will have increased by 5,540 beds since 2016 to a total of 15,500 beds, which is 40 percent of the 39,000 LRDP projection.

Although the University's response to the COVID-19 pandemic resulted in decreased occupancy rates in academic year 2020-21, the campus has a long-term need for additional student housing

and this Project provides housing served by adequate housing for r existing apartment housing due t effectively replace this loss.





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2013 Chancellor's Directive

- Primary Goals
 - Increase UC Davis footprint
 - Increase job growth
 - Student growth (5,000)
 - Faculty growth (300)
- Recession had recently ended
- City of Davis
 - Population of 65,770
 - Not very developer-friendly
 - May not have been ready

Dear UC Davis Community Members:

Thanks to the dedication and hard work of everyone associated with UC Davis, we continue to achieve excellence in our teaching, research and public service missions, despite dramatic cuts in state funding over the past five years.

I am writing now to tell you about the new strategy chosen to build on our accomplishments and continue achieving the aspirations put forward in the university's Vision of Excellence.

After months of study and consultation with a broad cross-section of campus stakeholders, we believe the University's 2020 Initiative is the best way to take UC Davis to a new level of excellence.

Our plan is to add about 5,000 international, national and California undergraduate students at a measured pace between now and 2020. This will reinforce our financial future and strengthen UC Davis, making it more diverse and international so we can better serve our students today and far into the future.

To support this growth in student numbers, we anticipate adding about 300 faculty, making additional investments in graduate education and building innovative new classrooms. Revenue generated by this initiative will also support staff and services necessary to ensure that all of our students have the opportunity to be successful.

UC Davis today is a powerful economic engine, generating \$7 billion a year of economic activity for our region and nearly 70,000 jobs. The university will be making even greater impact by 2020, and we are committed to working in partnership with our community to maximize the benefits of planned growth.





- 2016 UC President's Directive
 - Student Housing Growth
 - Primary Goals
 - House growing population
 - Keep housing affordable
 - 14,000 beds by 2020
 - Ten Campuses
- Davis Efforts
 - 6,000 beds
 - Approximately 4,800 beds via P3
 - Increase on-campus capabilities

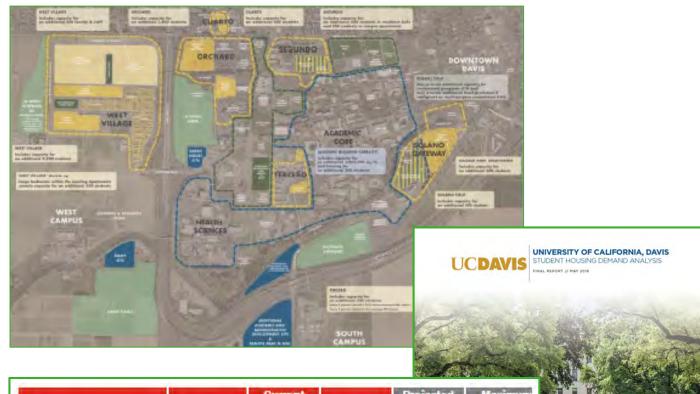






The Data

- Analysis
 - Request from Student Affairs
 - On-Campus Planning
 - Bring in the Consultants
 - On-Campus Verification
 - Off-Campus Investigation
 - Market Comparisons
 - Value
 - Present the Data
- Paralysis
- Fiat Lux!



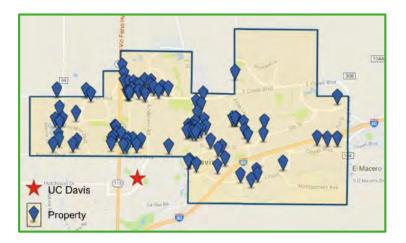
Enrollment Classification	Enrolled Population	Current Capture Rate	Current Occupancy	Projected Capture Rate	Maximum Potential Demand	
Freshman	6,134	92%	5,621	92%	5,621	
Sophomore	5,510	22%	1,225	39%	2,149	
Junior	8,125	18%	1,471	36%	2,918	
Senior / Other	10,443	10%	1,020	34%	3,577	
Graduate / Professional	6,179	14%	844	30%	1,831	
TOTAL	36,391	28%	10,181	44%	16,096	
Difference From Existing Occupancy (Unmet Demand):						

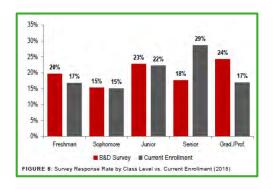




The Data

- Student Surveys
- **Baseline**
 - Upper or Lower Division
 - Number of Beds
 - Market Comparables
 - Studios
 - Shared Suites
 - **Apartments**
- Cost per Bed





	Studio	One Bedroom	Two Bedroom	Three Bedroom	Four Bedroom
Number of units	96	2,205	3,163	865	455
Min per unit	\$636	\$735	\$673	\$1,372	\$2,256
Average per unit	\$1,152	\$1,351	\$1,723	\$2,293	\$3,07
Max per unit	\$2,018	\$2,018	\$2,428	\$2,840	\$3,80
Min per person	\$636	\$735	\$337	\$457	\$56
Average per person	\$1,152	\$1,351	\$861	\$764	576
Max per person	\$2,018	\$2,018	51014	0947	\$95







The Data



Yosemite Hall

- 390 beds
- \$42M
- \$108K/bed



Shasta Hall

- 800 beds
- \$108M
- \$135K/bed



Orchard Park

- 1,549 beds
- \$319M
- \$206K/bed#



The Green at West Village

- 3,290 beds
- \$575M
- \$175K/bed#

	Undergraduate Unit Types					
	Studio Single	1BR / 1BA Double	2BR / 1BA Single	2BR / 2BA Double	4BR / 2BA Single	
Upper Division Demand ¹	511	1,049	1,733	2,166	2,926	
Graduate/Professional Demand	0	0	0	0	0	
Total Demand	.511	1,049	1,733	2,166	2,926	
West Village & Orchard Park ²	126	480	812	592	1,672	
Difference	385	569	921	1,574	1,254	
- 11		Graduate	Professional U	ional Unit Types		
	Studio Single	2BR / 1BA Single	3BR / 2BA Single	4BR / 2BA Single	5BR / 2BA Single	
Upper Division Demand	Ó	0	0	0	0	
Graduate/Professional Demand	188	333	290	358	152	
Total Demand	188	333	290	358	152	
West Village & Orchard Park ²	54	110	189	668	-1 00 -	
Difference	134	223	101	-310	52	
	Frank, N	nit Types ³	*			
Üpper Division Demand ¹ Graduate/Professional Demand Total Demand West Village & Orchard Park ²	29 211 240 35	2BR / 1.5BA Townhome 230 299 529 165	•			
Graduate/Professional Demand Total Demand	2BR / 1BA Flat 29 211 240	2BR / 1.5BA Townhome 230 299 529	*			
Graduate/Professional Demand Total Demand West Village & Orchard Park ² Difference	2BR / 1BA Flat 29 211 240 35 205	2BR / 1.5BA Townhome 230 299 529 165 364	•			
Graduate/Professional Demand Total Demand West Village & Orchard Park ²	2BR / 1BA Flat 29 211 240 35 205 s freshman stu	2BR / 1.5BA Townhoms 230 299 529 165 364		12, 2018		

[#] Includes Community and Maintenance Buildings







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Student Housing Growth at University of California, Davis

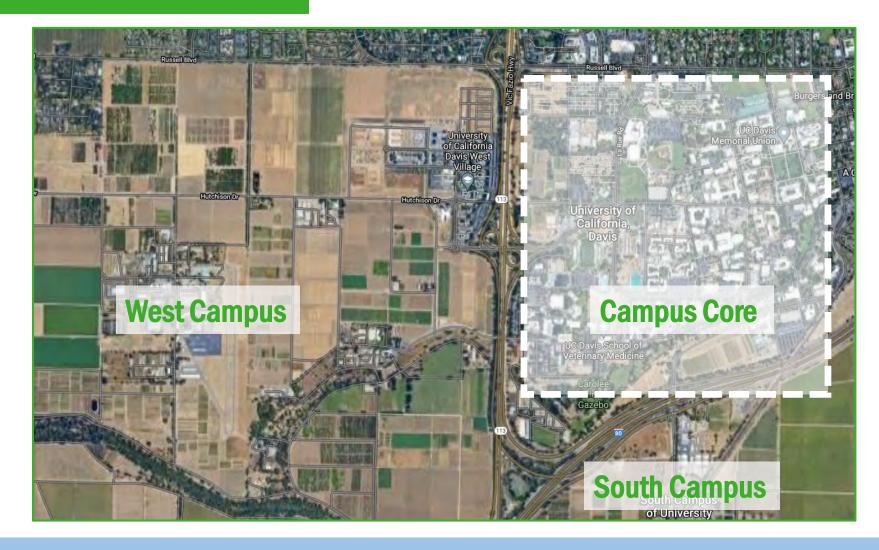
Questions so far?

Jim Carroll, Associate Vice Chancellor & University Architect June 24, 2021





RESILIENCY: CONNECT & REJUVENATE











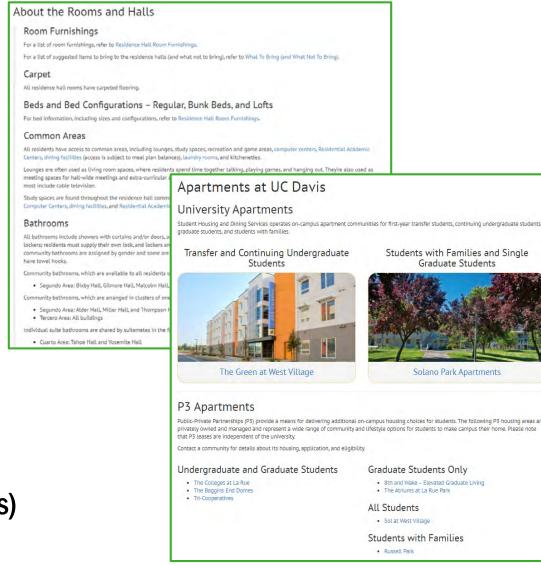








- Residence Halls
 - 2 or 3 beds in each shared room
 - No kitchens
 - Local dining
 - Local recreation
- Apartments
 - Public-Private Partnership (P3)
 - Developer-funded (bond sale)
 - University managed (in some cases)
 - Can be challenging



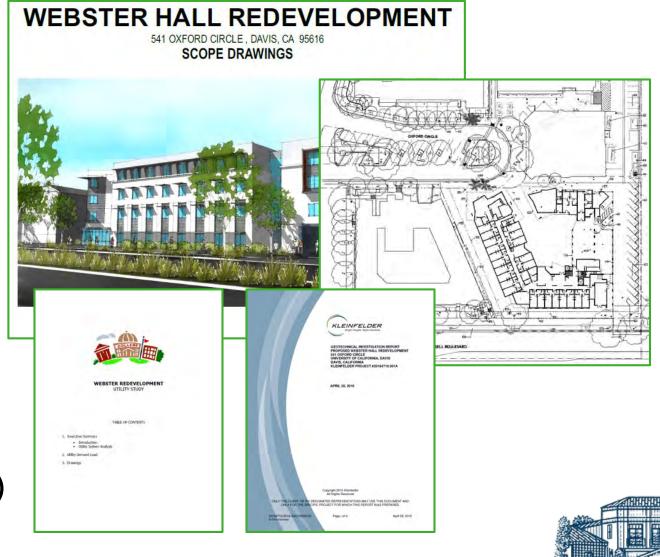
"If you've done one P3, you've done one P3"...UC Legal



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- Residence Halls Design Process
 - Usually Design-Build delivery
 - Bridging Documents process
 - Typically wood frame
 - NOT innovative
 - Points-scoring process
 - Left to D-B teams
 - We try to shed risk
 - Contractor has to take risk
 - There are still Change Orders (yes...)



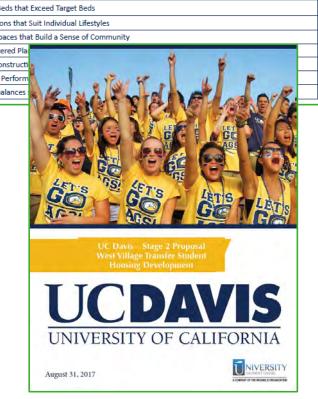




- P3 Design Process
 - Why would an Owner do this?
 - Risky
 - Loss of control
 - Questionable quality
 - "It's the economy, stupid"
 - Free Market (with handcuffs)
 - Mainly finance-based
 - NOT innovative
 - Points-scoring process
 - **Left to D-B teams**
 - Mainly narrative







1,200

1,875

USL Proposal

2.300

1,200

3,500

Variance

1,625

1,625







927

...You employ stone, wood and concrete, and with these materials you build houses and palaces. That is construction. **Ingenuity is at work**. But suddenly you touch my heart, you do me good, I am happy and I say: "This is beautiful." That is architecture...



...You employ stone, wood and concrete, and with these materials you build houses and palaces. That is construction. Ingenuity is at work. But suddenly you touch my heart, you do me good, I am happy and I say: "This is beautiful." That is architecture...and in the end, you basically have two options...



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basically have two options...







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...Cool, maybe









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...Cool, if done well











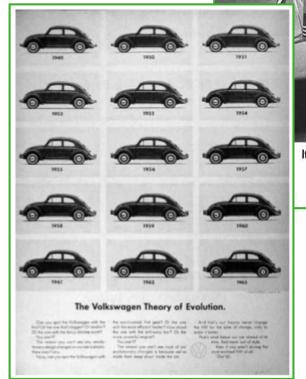


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Volkswagen Think Small Ad Campaign











Handsome is as handsome does









rd knows we tried. But we ze the Philodelphia 76ers'

preciate what a big thing

headroom than you'd exfrom seat to roof, I And front than you'd get in a

limousine. Because the engine's tucked over the rear wheels where it's out of the way

You can put 2 medium-sized suitcases up front (where the engine isn't), and 3 foirsized kids in the back. And you can fit a big baby in back of the back seat.

Actually, there's only one part of a VW that you can't put much into. The gas tank.

But you can get about 25

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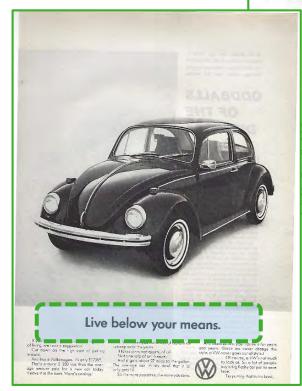


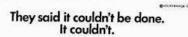


Handsome is as handsome does









ard knows we tried. But we ze the Philadelphia 76ers' ain into the front seat of a

"1" tall like Wilt our car is

a mere 6'7", you're small preciate what a big thing the VW.

headroom than you'd ex-/2" from seat to roof,) And in front than you'd get in a

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You can put 2 medium-sized suitcases up front (where the engine isn't), and 3 fairsized kids in the back. And you can fit a big baby in back of the back seat.

Actually, there's only one part of a VW of you can't put much into.
The gas tank.

But you can get about 29 liles per gallon out of it.

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S

Yosemite Hall (Residence Hall) - Design-Build









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S

Yosemite Hall (Residence Hall) - Design-Build



- **UCD** Wood (stick) Frame
 - Reasonable
- D-B Podium
 - Metal Stud
 - Prefabricated
 - Better





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M

Shasta Hall (Residence Hall) - Design-Build







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M

Shasta Hall (Residence Hall) - Design-Build



- **UCD** Wood (stick) Frame
 - Separated Buildings
- D-B Podium
 - Metal Stud
 - Prefabricated
 - One Building
 - MUCH Better





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The Green at West Village (P3 Apartments)







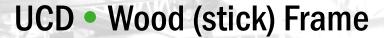




XL

The Green at West Village (P3 Apartments)





- Challenging
- P3 Steel Post & Beam
 - Prefabricated
 - Integral Lateral Bracing
 - EVEN Better





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Orchard Park (P3 Apartments)







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The Design Solutions

Orchard Park (P3 Apartments)



- **UCD** Wood (stick) Frame
 - Volumetric Modular
 - Steel Post & Beam
 - Prefabricated
 - Integral Lateral Bracing
 - The BEST





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The Design Solutions

Orchard Park (P3 Apartments)



UNIVERSITY OF CALIFORNIA, DAVIS



· SANTA BARBARA · SANTA CRUZ

January 19, 2021

Dear Regents of the University of California,



Graduate students and student parents at UC Davis require adequate for us to continue our world-renowned research and education. The Confidence of December 1997 of December 19 largest housing projects in the State of California specifically for parents, offering more than 1,500 beds across 11 different build MOU signed in 2018. While UC Davis is on track to excent at the opposition remains to new building projects main and tche or vociferous opposition, students cannot depend on no tche or vociferous opposition, students cannot be using projects to a second page housing projects to a sec opposition remains to new building projects within the C the City, where rhetoric against new housing projects. graduate students cannot count on nev

We, the undersigned Executive Council of the Crasuate Student Association of UC Davis, affirm that Housing has engaged gradual to hidents and student parents at many levels and occasions over the more than four years the this project has been planned, and we are pleased that the project has finally reached this poor. This engagement has included an Advisory Committee and several consultations with the contact and sev

As graduate students are student, arents, we desperately need Orchard Park. As rental prices rise and vacancy in a shine, we hope Orchard Park will provide major relief for us, and we eagerly await its apply at, de elopment, and completion in the near future. While this will not completely allowate the complete of the housing market surrounding UC Davis, this project represents a sustant of step forward.

roport of this project and encourage you to vote to advance this project.

Sincerely

Jonathan Minnick, President, Graduate Student Association Gwen Chodur, External Vice-President, Graduate Student Association Tez Stair, Internal Vice-President, Graduate Student Association Courtney Pollard, Secretary, Graduate Student Association Rochelle Werner, Treasurer, Graduate Student Association

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927

...The development of prefabrication, transportation, and mass production techniques had already been employed, both singly and in combination, in the realization of buildings prior to the twentieth century. However, the concept of industrialized building, in which a coherent, factory-based system of manufacturing building components is deployed to produce similar buildings at various sites, was not developed until the inter-war period...



Positives

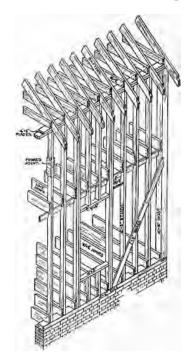
- Educated Student Affairs Client
- 37 Years of P3 Experience
- Auxiliary Funding
- Strong Staffing Models
- Negatives
 - Project Costs
 - Robust Processes
 - Edge Campus Sites
 - Utility Connections

...hope is not a strategy.



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- Incremental Learning
 - Wood Framing
 - Metal Framing









- Incremental Learning
 - Wood Framing
 - Metal Framing
 - Panelization







...bring your Fire Marshal with you.



- Wood Framing
- Metal Framing
- Panelization
- Off-Site fabrication





...bring your Fire Marshal with you.



- Wood Framing
- Metal Framing
- Panelization
- Off-Site fabrication
- Volumetric Modular













- Wood Framing
- Metal Framing
- Panelization
- Off-Site fabrication
- Volumetric Modular
- Design **Expertise**











...bring your **Consultants** with you.



- Wood Framing
- Metal Framing
- Panelization
- Off-Site fabrication
- Volumetric Modular
- Design Expertise
- Reevaluate and Go!











...bring your **Consultants** with you.

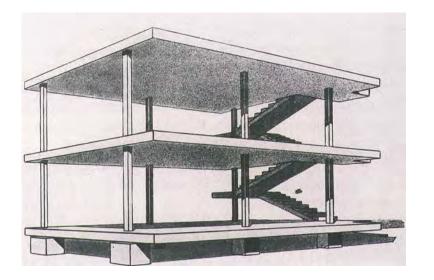


The Results



1927

...If we eliminate from our hears and minds all dead concepts in regard to the house, and look at the question from a critical and objective point of view, we shall arrive at the "House Machine," the mass-production house, healthy (and morally so too) and beautiful in the same way that the working tools and instruments which accompany our existence are beautiful...





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The Results

100% leased for fall quarter 2021

100% leased for fall quarter 2021

Began on May 26

Construction type and team allowed for significantly reduced bonding rate

Last project in this current phase

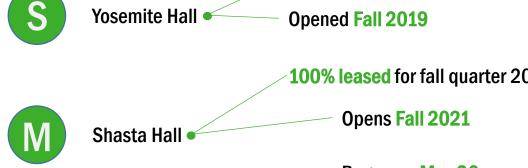
Opening all 3,290 beds, Recreation Building and Maintenance Building two months ahead of schedule

1,000 beds opened during pandemic – 55% fill rate

25% below market rate

Students were able to depart during pandemic

100% leased for fall quarter 2021





Orchard Park



The Green at West Village

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The Results

100% leased for fall quarter 2021

S Yosemite Hall Opened Fall 2019

100% leased for fall quarter 2021

Shasta Hall • Opens Fall 2021

Began on May 26



staro ct a the current phase

Opening all 3,290 beds, Recreation Building and Maintenance Building two months ahead of schedule

1,000 beds opened during pandemic – 55% fill rate

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RESILIENCY: CONNECT & REJUVENATE

The Next Chapter

- Commercial Competition
 - Ten projects near campus
 - Direct access to campus
 - 78% of on-campus traffic non-auto
 - ALL traffic comes on campus
 - Bicycles
 - Bus
- Financial "Waterfall" of P3
 - Financial Aid
 - Rental rebates
- Faculty/Staff Housing







UCDAVIS

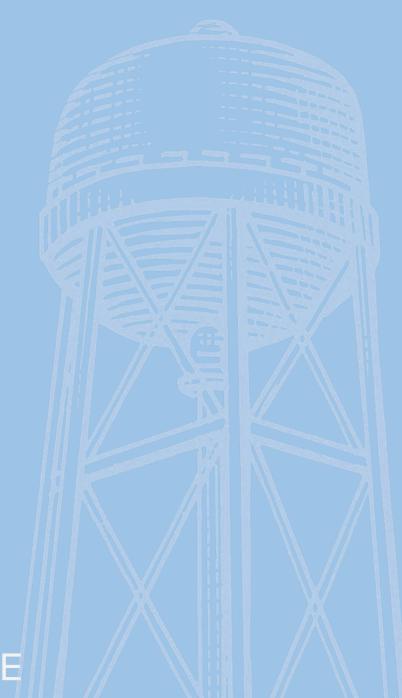
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Last Chance Questions?

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