



GREEN SHEET

ISSUE 14 | SUMMER 2022



Recently Certified Project: High-Tech Confidential Client

When our High-Tech Confidential Client set out to update its campus back in 2017, it's no coincidence it turned to the general contractor that previously built it: Rudolph and Sletten. Fast forward to today, and the project was recently awarded the prestigious [COTE® Top Ten Award](#) by the AIA for 2021; the industry's best-known awards program for sustainable design excellence, which awards 10 innovative projects each year a prize for setting the standard in design and sustainability.



R&S' MOST DECORATED SUSTAINABLE BUILDING

The 32-acre campus renovation and expansion will house 2,000+ employees in 643,000sf, a 20% increase in area supporting a 40% increase in employees, all while reducing potable water usage by 57%, reducing energy demand by 55%, and increasing landscaped areas by 300%. The project is our company's most decorated sustainable building pursuing the International Living Future Institute's ("ILFI") Zero Carbon Certification (the first worldwide Zero Carbon third-party certified standard) and Petal Certification v3.1 (pursuing the Materials, Water and Energy petals), LEED v3 Platinum Certification, and WELL v2 Gold Certification. At the time of its construction, it was the largest cross-laminated timber ("CLT") building in the United States with FSC-certified CLT wood columns and interior ceiling composite panels that punctuate the building's commitment to reduced embodied carbon.

WATER STEWARDSHIP

The campus is a global standard for water stewardship in a region familiar with drought and water shortages. Potable water use is kept to a bare minimum thanks to a sophisticated reclaimed water system and an onsite water treatment facility that will pay for itself within 20 years (or sooner if the cost of water continues to rise in California). The system will even be able to supply potable water from recycled water sources once the code allows it. Drought hazards are mitigated by a 100% net zero non-potable water system, onsite water collection/storage/treatment, and drought-tolerant planting. Rainwater is collected in two 60,000-gallon pretreatment tanks, filtered, then stored in blending tanks. Building wastewater is collected, treated through a series of packed-bed filters, vertical wetlands, membrane filters, and ozone and UV disinfection before it is stored in the blending tanks. With the onsite non-potable water systems, 55% of project demand is offset, supplying 4 million+ gallons of non-potable water annually.





ENERGY CONSERVATION

The 476kW of new and existing PVs along with thermal energy storage tanks provide a comprehensive campus approach to energy conservation. The project is all electric except for cooking gas in the four food halls. The overall project energy use rate is 73.5 kBtu/sf/yr (site EUI) with the 2,000sf lab accounting for 53% of that energy pie. The office and food service EUI is 30.9 kBtu/sf (site EUI). All energy from municipalities is from a renewable, carbon-free source with High-Tech Confidential Client's participation in the Silicon Valley Clean Energy Green Prime program. With a commitment to all electric vehicles by 2030, there are 70 installed EV charging stations with infrastructure ready for 88 additional ones.



SUSTAINABLE PROJECT TALLY

60 Completed Projects
 16,331,648 square feet
 \$6,516,122,201

6 In Progress Projects
 638,500 square feet
 \$508,325,733

Rudolph and Sletten Sustainability Development Committee (SDC)

Our mission is to further develop Rudolph and Sletten as an industry leader in sustainable construction.

Sustainability Director:

John Home, VP Operations - Roseville

Committee Members:

Mike Mohrman Christian Parker
 Montserrat Fernandez Pierce Salamack
 Hugo Mailloux-Beauchemin

RECENTLY CERTIFIED PROJECTS



California Department of General Services
Clifford L. Allenby Building
 360,000sf / \$236,133,166



Title 24 Update Incoming!

HEADS UP!

New changes to Title 24 are coming our way at the beginning of next year that will significantly increase mechanical, electrical and plumbing costs on your project. The new code applies to projects that start the permit review process after December 31, 2022.

WHAT IS TITLE 24?

The California Code of Regulations (CCR) is the codification of the rules and regulations that have been adopted by California state agencies. With nearly 400,000 regulatory restrictions (more than double the national average), California is the most heavily regulated state in the nation. The CCR contains 28 titles that range from subjects like Education (Title 5) Law (Title 11) and Motor Vehicles (Title 13), to name a few. Title 24 is the California Building Standards Code and is reserved for state regulations that govern the design and construction of buildings (private and public), associated facilities and equipment.

WHAT DOES TITLE 24 COVER?

There are 13 parts to CCR Title 24. It contains requirements for structural, mechanical, electrical and plumbing systems, and requires measures for energy conservation, sustainable design, construction and maintenance, fire and life safety, and accessibility. New editions of Title 24 are published every three years with supplemental information published in between each new edition. The most recent (2019) edition of Title 24 went into effect January 1, 2020. The upcoming 2022 edition of Title 24 will go into effect January 1, 2023.

WHAT'S CHANGING

The biggest changes to Title 24 in the upcoming 2022 edition are found in Part 6 (California Energy Code). The proposed 2022 Energy Code update focuses on four key areas in new construction of homes and businesses:

1. Encouraging electric heat pump technology and electric heat pump use for space heating and water heating (heat pumps use less energy and produce fewer emissions than traditional HVAC and water heaters).
2. Establishing electric-ready requirements when natural gas is installed (setting up owners to use electric heating, cooking and vehicle charging in the future)
3. Expanding solar photovoltaic (PV) system and battery storage standards (reducing reliance on the energy grid and the grid's reliance on fossil fuel power plants)
4. Strengthening ventilation standards to improve indoor air quality (reducing illness from poor air quality and reducing disease transmission)

COST STUDY

BATTERY STORAGE AND PV

Battery storage and photovoltaic (PV) arrays will be required for certain businesses like offices and clinics. The calculations to determine how much capacity is required are complicated and require knowing the project's zip code, roof square footage, covered parking square footage, and the square footage of spaces by type (office, medical office building, clinic, warehouse, etc.).

Our cost estimate for a 157,000sf medical office building in San Jose with a 14,000sf roof to add sufficient battery storage and PV array capacity to achieve the new code (during the design phase, before construction) is \$350,000. This same addition for a medical office building in Indio would be \$460,000.

A similar cost estimate for a 157,000sf office building in San Jose with a 14,000sf roof is \$1.7M. This same addition for an office building in Indio would be \$1.9M. Increase the roof square footage for the office in Indio to 50,000sf, and the cost jumps up from \$1.7M to \$3.5M.

Note: these are preliminary estimates with many assumptions and are based on Prescriptive Methods. Most of our projects use Performance Methods so trade-offs would apply.

TELL ME MORE

Battery storage and PV are not the only impacts your project will see. Here are links to downloadable PDF documents from the [California Energy Commission](#) and [ACE Resources](#), which further outline the changes being made to Part 6 of Title 24.

BOTTOM LINE

Encourage your owners to get into the permit queue before the deadline at the end of the year. If you don't think they will hit the deadline, be sure to include allowances for PV, battery storage and associated MEP costs in your budget.



LEED & NET ZERO PROJECTS



* WIP = Work in Progress

3 2 14 34 16 3

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HIGHER EDUCATION	California Institute of Technology, Chemistry & Chemical Engineering Lab			✓		
	Chabot College, Library & Learning Connection Building		WIP			
	CSU Los Angeles, Building 12 Seismic Retrofit & Renovation			WIP		
	CSU Monterey Bay, Academic Building II				✓	
	CSU San Bernardino, Performing Arts Building Addition				WIP	
	Grossmont College Student & Administrative Services Building			✓		
	Grossmont College, Griffin Center Renovation & Expansion		✓			
	Point Loma Nazarene University, New Science Building			✓		
	San Diego Community College, Cesar Chavez - Continuing Education		✓			
	San Diego Community College, Career Tech Center (VTC)			✓		
	San Diego Community College, Science Building		✓			
	Sierra College, Tahoe Truckee Campus			✓		
	Solano Community College, Biotechnology & Science Building		✓			
	Southwestern Community College, Math, Science & Engineering Building					✓
	Southwestern Community College, Performing Arts & Cultural Center		✓			
	UC Berkeley, Energy Biosciences Building				✓	
	UC Berkeley, Molecular Foundry				✓	
	UC Davis, Veterinary Medicine Student Services & Administration Center				✓	
	UC Los Angeles, Teaching & Learning Center for Health Sciences					✓
	UC Los Angeles, Franz Tower Renovations					WIP
UC Los Angeles, Pritzker Hall Seismic Renovation					✓	
UC Santa Barbara, BioEngineering Building					✓	
UC San Diego, Clinical & Translational Research Institute				✓		
UC San Diego, Koman Family Outpatient Pavilion				✓		
UC San Diego, MESOM Research Laboratory Facility					✓	
UC San Francisco, HSIR East & West Towers Tenant Improvements				✓		
UC San Francisco, Mission Hall: Global Health & Clinical Sciences				✓		
UC San Francisco, Precision Cancer Medicine Building - Mission Bay				WIP		
UC San Francisco, Smith Cardiovascular Research Building				✓		
University of San Diego, Ernest & Jean Hahn Student Center Addition				✓		
California State Automobile Association, NCNU Headquarters				✓		
Moffett Towers Club, Amenities Building				✓		
Moffett Towers, Office Buildings, Parcel 1				✓		
Moffett Towers, Office Buildings, Parcel 3				✓		
Nokia Summit Rancho Bernardo Office Buildout				✓		
Pacific Shores Center, R&S HQ Relocation				✓		
Station Landing, Office Development & Parking Garage				✓		
Summit Rancho Bernardo Phase 1 Shell				✓		
GOV'T	City of Sacramento, Sacramento Valley Station Intermodal Phase 2				✓	
	Department of General Services, Clifford L. Allenby Building	✓			✓	FITWEL
	Judicial Council of California, San Bernadino Courthouse				✓	
	Judicial Council of California, San Diego Central Courthouse			✓		
HEALTHCARE BIOTECH & PHARMA	Lawrence Berkeley National Laboratory, Integrative Genomics Building			✓		
	National Oceanic & Atmospheric Admin, La Jolla Lab Replacement			✓		
	SLAC National Accelerator Laboratory, LCLS Building 901 Office Building				✓	
	SLAC National Accelerator Laboratory, PSLB Interior Buildout					✓
	Conf. Client, Child Care Center	✓				✓
	El Camino Hospital, Integrated Medical Office Building & Parking Garage				✓	
	Johnson & Johnson Pharmaceutical Research Institute Phase 2		✓			
	Kaiser, Redwood City Replacement Hospital			✓		
	Kaiser, Roseville Riverside-Cirby MOB, Site and Parking			✓		
	Sharp Healthcare, Rees-Stealy Wellness Center			✓		
TECHNOLOGY	Sutter Health, Van Ness & Geary Medical Office Building TI				✓	
	UC Davis Health, Patient Contact Center			✓		
	Washington Hospital, Morris Hyman Critical Care Pavilion		✓			
	Conf. NorCal High-Tech Client, HQ Tenant Improvements	✓				
	Conf. NorCal High-Tech Client, New Office Building					WIP
	Conf. NorCal High-Tech Client, Office Campus				WIP	
	Conf. NorCal High-Tech Client, Silicon Valley Campus Redevelopment					✓
	ecoATM, San Diego Headquarters Build-Out			✓		
RETAIL	Hewlett Packard, Building 20 Level C Tenant Improvements			✓		
	Hewlett Packard, Executive Briefing Center				✓	
	Hewlett Packard, Moffett Towers Buildings F & G Office Buildout				✓	
	Verizon Wireless, Fairfield Mobile Switching Center				✓	
Macerich Broadway Plaza Retail Development				✓		
Warner Bros. Studios, Building 43			✓			

