



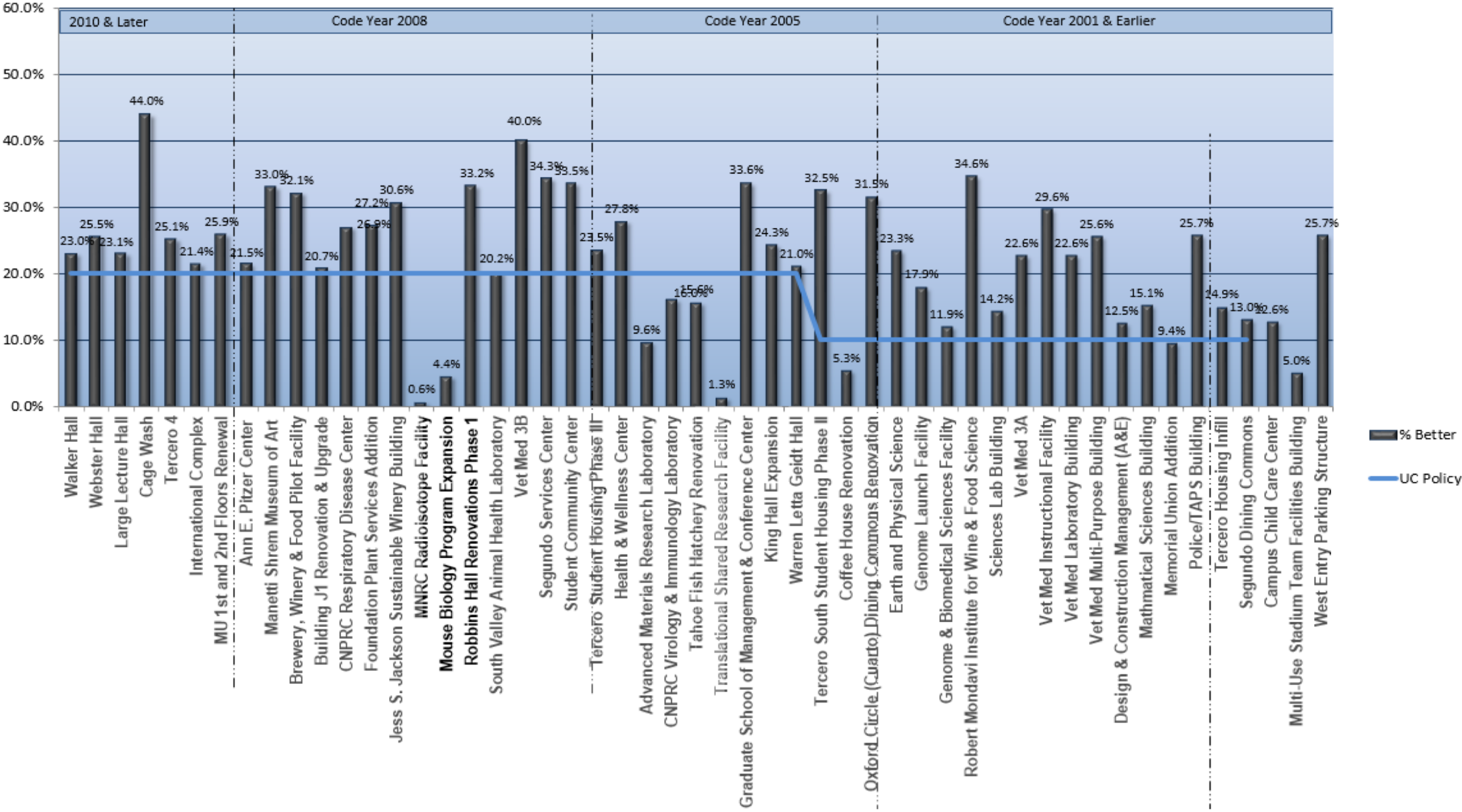
Capital Projects LEED Certification
Summary

October 22, 2019

Summary

Project	GSF	Title 24-6 (better than %)	Energy (ASHRAE 90.1)	Water Efficiency	Certification date	Rating system	Version	Certification level
UCD Tahoe Center for Environmental Studies	46,872	15.6%	35%	30%	2007	BD+C	v2.0	Platinum
UCD Brewery, Winery and Food Facilities	33,600	32.1%	38.5%	30%	2010	BD+C	v2.2	Platinum
UCD Graduate School of Management and Conference Center	91,419	33.6%	42%	30%	2011	BD+C	v2.2	Platinum
UCD Segundo Services Center	41,774	34.3%	42%	30%	2013	BD+C	v3.0	Platinum
UCD Student Community Center	37,587	33.5%	42%	30%	2013	BD+C	v2.2	Platinum
UCD Tercero Housing Phase III	280,940	26%	48%	35%	2014	BD+C	v3.0	Platinum
UCD Veterinary Medicine 3B	118,678	31.5%	48%	30%	2016	BD+C	v3.0	Platinum
UCD Manetti Shrem Museum of Art	31,340	33%	48%	40%	2016	BD+C	v3.0	Platinum
UCD Tercero Student Housing Phase II	159,059	32.5%	28%	30%	2011	BD+C	v2.2	Gold
UCD Health and Wellness Center	78,275	27.8%	28%	30%	2012	BD+C	v2.2	Gold
UCD King Hall Renovation and Expansion	30,488	24.3%	24.5%	30%	2014	BD+C	v2.2	Gold
UCD Ann E. Pitzer Center	17,640	21.5%	28% (14%)	40%	2017	BD+C	v3.0	Gold
UCD International Complex	59,138	21.4%	34%	40%	2017	BD+C	v3.0	Gold
UC Davis – MU 1st and 2nd Floors Renewal	34,183	25.9%	20/37	30%	2019	CI	v3.0	Gold
UC Davis Tercero 4	166,695	25.1%	30%	30%	2018	BD+C	v3.0	Gold
UC Davis Cage Wash	11,700	44%	38%	30%	2019	BD+C	v3.0	Gold
UCD Cuarto Dining Commons	17,875	31.5%	6/10	30%	2011	CI	v2.0	Gold
UCD Coffee House	26,591	5.3%	5/12	30%	2012	CI	v2.0	Gold
UCD Robbins Hall Phase I	27,329	22.9%	4/12	20%	2012	CI	v2.0	Gold
UC Davis – MU 1st and 2nd Floors Renewal	34,183	25.9%	20/37	30%	2019	CI	v3.0	Gold
UCD Trinchero Family Estates/Foundation Plant Services	7,652	27.2%	20%	30%	2016	BD+C	v3.0	Silver

Percent Better than Title 24



Typical Core Campus Scoring

Sustainable Sites	
Prereq 1	Construction Activity Pollution Prevention
Credit 1	Site Selection
Credit 2	Development Density & Community Connectivity
Credit 3	Brownfield Redevelopment
Credit 4.1	Alternative Transportation, Public Transportation Access
Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms
Credit 4.3	Alternative Transportation, Low-Emitting & Fuel-Efficient Vehicles
Credit 4.4	Alternative Transportation, Parking Capacity
Credit 5.1	Site Development, Protect or Restore Habitat
Credit 5.2	Site Development, Maximize Open Space
Credit 6.1	Stormwater Design, Quantity Control
Credit 6.2	Stormwater Design, Quality Control
Credit 7.1	Heat Island Effect, Non-Roof
Credit 7.2	Heat Island Effect, Roof
Credit 8	Light Pollution Reduction

Energy & Atmosphere	
Prereq 1	Fundamental Commissioning of the Building Energy Systems
Prereq 2	Minimum Energy Performance
Prereq 3	Fundamental Refrigerant Management
Credit 1	Optimize Energy Performance
	1-3 points
	4-6 points
	7-8 points
	9-10 points
Credit 2	On-Site Renewable Energy
	1 point
	2 points
	3 points
Credit 3	Enhanced Commissioning
Credit 4	Enhanced Refrigerant Management
Credit 5	Measurement & Verification
Credit 6	Green Power

Water Efficiency	
Credit 1.1	Water Efficient Landscaping, Reduce by 50%
Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation
Credit 2	Innovative Wastewater Technologies
Credit 3.1	Water Use Reduction, 20% Reduction
Credit 3.2	Water Use Reduction, 30% Reduction

Typical Core Campus Scoring

	Indoor Environmental Quality
Prereq 1	Minimum IAQ Performance
Prereq 2	Environmental Tobacco Smoke (ETS) Control
Credit 1	Outdoor Air Delivery Monitoring
Credit 2	Increased Ventilation
Credit 3.1	Construction IAQ Management Plan, During Construction
Credit 3.2	Construction IAQ Management Plan, Before Occupancy
Credit 4.1	Low-Emitting Materials, Adhesives & Sealants
Credit 4.2	Low-Emitting Materials, Paints & Coatings
Credit 4.3	Low-Emitting Materials, Carpet Systems
Credit 4.4	Low-Emitting Materials, Composite Wood & Agrifiber Products
Credit 5	Indoor Chemical & Pollutant Source Control
Credit 6.1	Controllability of Systems, Lighting
Credit 6.2	Controllability of Systems, Thermal Comfort
Credit 7.1	Thermal Comfort, Design
Credit 7.2	Thermal Comfort, Verification
Credit 8.1	Daylight & Views, Daylight 75% of Spaces
Credit 8.2	Daylight & Views, Views for 90% of Spaces

	Materials & Resources
Prereq 1	Storage & Collection of Recyclables
Credit 1.1	Building Reuse, Maintain 75% of Existing Walls, Floors & Roof
Credit 1.2	Building Reuse, Maintain 95% of Existing Walls, Floors & Roof
Credit 1.3	Building Reuse, Maintain 50% of Interior Non-Structural Elements
Credit 2.1	Construction Waste Management, Divert 50% from Disposal
Credit 2.2	Construction Waste Management, Divert 75% from Disposal
Credit 3.1	Materials Reuse, 5%
Credit 3.2	Materials Reuse, 10%
Credit 4.1	Recycled Content, 10% (post-consumer + pre-consumer)
Credit 4.2	Recycled Content, 20% (post-consumer + pre-consumer)
Credit 5.1	Regional Materials, 10% Extracted, Processed & Manufactured Regionally
Credit 5.2	Regional Materials, 20% Extracted, Processed & Manufactured Regionally
Credit 6	Rapidly Renewable Materials
Credit 7	Certified Wood

	Innovation & Design Process
Credit 1.1	Innovation in Design: Provide Specific Title
Credit 1.2	Innovation in Design: Provide Specific Title
Credit 1.3	Innovation in Design: Provide Specific Title
Credit 1.4	Innovation in Design: Provide Specific Title
Credit 2	LEED Accredited Professional

Jan Shrem & Maria Manetti Shrem Museum of Art

LEED Platinum

PROJECT INFORMATION

SIZE: 32,000 square feet

COST: \$30 million

COMPLETED: Fall 2016

ASSOCIATED ARCHITECTS: Bolin Cywinski Jackson and SO-IL

GENERAL CONTRACTOR: Whiting-Turner Contracting

ENVELOPE

- Precast concrete
- Metal roof deck
- Insulation

MECHANICAL

- Uses high efficiency, standalone chiller and boiler systems
- Centralized HVAC with VAV distribution and humidity control

WATER EFFICIENCY

- **57% water efficient landscape irrigation**
- **Water use reduction by 44%**

ENERGY AND ATMOSPHERE

- **Enhanced commissioning of systems**
- **No CFC-based refrigerants in use**
- **58% reduction of energy use**
- **One year of detailed energy monitoring**

INNOVATION & DESIGN

- Green cleaning program to reduce chemical use for occupants and the art.
- Reduction of mercury in lamps to support sustainable purchasing practices.



Ann E. Pitzer Center

LEED Gold

PROJECT INFORMATION

SIZE: 17,000 square feet

COST: \$13.5 million

COMPLETED: Fall 2016

DESIGN/BUILD TEAM: LPAS/Kitchell CEM

ENVELOPE

- Precast concrete- main hall
- Instructional spaces- steel framing with plaster

MECHANICAL

- Cooling and heating sources from Campus Central Plant
- Central HVAC systems with VAV and multi-zone distribution

WATER EFFICIENCY

- **Low-Flow Plumbing Fixtures**
- **Landscape – Use of more draught tolerant plants and high efficiency irrigation**
- **Water Metering to monitor usage**

ENERGY AND ATMOSPHERE

- **Commissioning of Building to insure operational efficiencies**
- **Heating and cooling systems minimize the impact on global climate change**
- Exceeds title 24 part 6 by 21.5%

INNOVATION & DESIGN

- Green cleaning program used for custodial practices
- Provision for campus-wide outreach and green building practices (education through case studies; CEED website dashboard, and Interactive thermal



International Complex

LEED Gold

PROJECT INFORMATION

SIZE: 61,000 square feet

COST: \$29 million

COMPLETED: Fall 2016

DESIGN/BUILD TEAM: Flint Builders/MFDB

ENVELOPE

- Steel structure infill framing with plaster and stone finishes

MECHANICAL

- Variable Refrigerant Flow (VRF) HVAC system with dedicated outdoor air system (DOAS)
- High thermal and indoor air quality comfort with advanced zone controls (HVAC and lighting occupancy control)

WATER EFFICIENCY

- 20% **water efficient landscape irrigation**
- 40% water use reduction

ENERGY AND ATMOSPHERE

- Exceeds Title 24 part 6 by 20%
- 34% better than ASHRAE

INNOVATION & DESIGN

- Site transit focus – bike parking, reduced parking, documenting Go Club successes, public transit provision and development density.
- Transportation management plan which included a campus transit survey.



Memorial Union Renewal

LEED Gold

PROJECT INFORMATION

SIZE: 50,000 square feet

COST: \$24 million

COMPLETED: Spring 2017

ASSOCIATED ARCHITECTS: Field Paoli

GENERAL CONTRACTOR: Otto Construction

MECHANICAL

- Cooling and heating sources from Campus Central Plant
- Replaced outdated Multi-Zone HVAC systems with new custom air handler and VAV air distribution
- New hydronic system

WATER EFFICIENCY

- **Water reduction from base line of potable use 32.14%**
- **Low flow plumbing fixtures**

ENERGY AND ATMOSPHERE

- **Lighting power reduction = 48.2%**
- **Exceeds title 24 part 6 by 25.9%**

INNOVATION & DESIGN

- **Improved quality of space and wayfinding**
- **Lighting not required during the day**
- **95% on site generated construction waste diverted from landfill**
- **40% total building materials, by value, manufactured with recycled materials**



ENERGY CODE CHANGES

- Lighting – Power allowances, daylighting, lighting control, ..
- Mechanical – equipment efficiency, demand control ventilation, occupant sensor requirements, ..
- Envelope – Solar PVs, More efficient windows, doors, ..

LEED VERSION 4

- Site
 - Minimum covered bike area
 - Showers
- Transit
 - Weekends
- Materials
 - Environmental product declaration
- Energy
 - Renewable energy
 - Solar farms/parking

COSTS

- Capital
- Operational
- Infrastructure/generation improvements

CAMPUS COMPETING INTERESTS

- Program vs. energy efficiency and LEED
- Deferred maintenance and seismic improvements
- Architectural and exterior features
- Technology / maintenance costs