

# AIAOC Design Awards Performance Data Worksheet

Areas in Green are instructions.

1. BRIEF STATEMENT	
	<p>In the space below list the energy efficiency and environmental performance goals for the project. These could be as simple as to comply with code minimum or as ambitious as to achieve zero net energy and/or eliminate all materials on the Living Building Challenge Red List. You are encouraged to describe environmental strategies throughout your design awards submittal materials .</p>
	<p>The building is certified LEED Gold. Special attention has been placed on water conservation with all California native planting and the elimination of all potable water for landscape irrigation. The plant materials have been designed to provide a curated experience of four local habitats as a part of the building experience. Energy consumption on a cost basis has been reduced to be 23% better than Title 24 through the integration of natural light and ventilation, high efficiency lighting, glazing and envelope design. The project includes more than 20% recycled and locally sourced materials and creates a healthy environment with localized comfort and lighting controls for all occupants. Green power has been provided to offset building consumption. Enhanced commissioning will sustain energy efficiency through monitoring.</p>

2. ENERGY EFFICIENCY									
<b>Projects in California</b> (Complete section A <u>or</u> B. Complete C only if applicable.)	<b>A. Modeled Performance for California Projects (If you complied using a computer model.)</b>								
	Enter information from the Title 24 Building Energy Standards compliance report below. If you complied under 2013 Title 24, refer to form CF-1R-PERF for Residential Bldgs and NRCC-PRF for Nonresidential & Highrise Residential Bldgs.								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Year of Title 24 Standard Used</th> <th style="width: 25%;">Energy Budget of Baseline Bldg (Code Min) in kBtu/sf/yr</th> <th style="width: 25%;">Modeled Performance Of Your Design in kBtu/sf/yr</th> <th style="width: 25%;">Percent Savings Beyond Code Minimum</th> </tr> </thead> <tbody> <tr> <td>2005</td> <td>110.90 kBtu/sf/yr</td> <td>90.3 kBtu/sf/yr</td> <td>18.6% on a quantity basis and 23% on a cost basis.</td> </tr> </tbody> </table>	Year of Title 24 Standard Used	Energy Budget of Baseline Bldg (Code Min) in kBtu/sf/yr	Modeled Performance Of Your Design in kBtu/sf/yr	Percent Savings Beyond Code Minimum	2005	110.90 kBtu/sf/yr	90.3 kBtu/sf/yr	18.6% on a quantity basis and 23% on a cost basis.
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	<b>B. Prescriptive Compliance for California Projects (If you did NOT comply using a computer model.)</b>								
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Not applicable									
<b>C. Measured Performance for California Projects (If Available)</b>									
If you have measured data showing actual energy use for 12 months, enter it below as Energy Use Intensity (EUI) in kBtu/sf/year.									
Project has been occupied since September 2016; a full year of Performance Data is not yet available.									

Projects Outside of California (Complete section E <u>or</u> F. Complete G only if applicable.)	<b>E. Modeled Performance for Non-California Projects (If you complied using a computer model.)</b>			
	Enter information from the energy compliance report below. Your engineer or energy modeler should be able to provide this information.			
	<b>Year of Title 24 Standard Used</b>	<b>Energy Budget of Baseline Bldg (Code Min) in kBtu/sf/yr</b>	<b>Modeled Performance Of Your Design in kBtu/sf/yr</b>	<b>Percent Savings Beyond Code Minimum</b>
	Not applicable	Not applicable	Not applicable	Not applicable
	<b>F. Prescriptive Compliance for I</b>			
	<b>Standard and Year of Standard</b>	Some projects comply via the <i>prescriptive path</i> , where individual building components and equipment must meet minimum requirements. If your project complied prescriptively, but your goal was to exceed minimum performance, briefly describe what you did below.		
	Not applicable			
	<b>G. Measured Performance (If Available)</b>			
	If you have measured data showing actual energy use for 12 months, enter it below as Energy Use Intensity (EUI) in kBtu/sf/year.			
Project has been occupied since September 2016, a full year of Measured Performance is not yet available.				

<b>3. RENEWABLE ENERGY &amp; NET ENERGY USE (If Applicable)</b>			
If the project includes renewable energy, either on-site or through a purchase of off-site renewable energy, provide information on source, annual output, and net energy consumption.			
<b>Renewable Source</b>	<b>Annual Renewable Energy Production</b>	<b>Net Energy Consumption</b>	<b>Modeled or Actual Data</b>
Green Power purchase from Clean-e sources from wind powered generation.	Annual green power for project is 1,250 MWH.	Total annual use for project is 1,785 MWH. Green power offsets 70.01% of project use.	Modeled.

**4. WATER EFFICIENCY, REUSE, AND MANAGEMENT (If Applicable)**

California water efficiency standards are part of Title 24, Part 11, typically referred to as Cal Green. If your project achieved performance significantly beyond Cal Green minimum requirements, or incorporates innovative water efficiency, reuse, and management strategies and/or equipment, concisely describe them below.

Project addresses water conservation in two primary areas. All Southern California native plant materials have been provided with no potable water utilized for irrigation. In addition to this, all plumbing fixtures in the building have been selected for high efficiency and automated use reduction. This has resulted in a savings of more than 35% in water consumption in the building, exceeding Cal Green even with a laboratory use.

**5. MATERIAL USE & SELECTION FOR RESOURCE EFFICIENCY & HEALTH (If Applicable)**

Briefly describe *exemplary* steps you took related to material use and selection. Examples might include exemplary performance in use reduction or reuse, incorporation of life cycle assessment and environmental product declarations, occupant and environmental health criteria & avoidance of chemical hazards, embodied energy and carbon, among many others.

More than 20% of the materials in the project are from post consumer recycled materials and 20% are locally sourced. All spaces are negatively pressurized and separated from adjoining spaces to prevent migration of indoor pollutants. Temperature and lighting controls have been integrated with the building management system and provided with local control for user comfort with maximum access to natural light and ventilation. Shared natural light penetrates work rooms and laboratories through exterior and interior windows and clerestories. The outcome will be measured and verified as the project is utilized. All building materials have been selected as low VOC to enhance indoor air quality. All site storm water is detained on site and bio-filtered to enhance quality of storm water control. Lighting is designed to protect the dark night sky.



**SADDLEBACK COLLEGE SCIENCE BUILDING**  
SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT

 DENOTES LEED GOLD STRATEGY

1. CAMPUS NODE

2. ACCESSIBLE RAMPS

3. BRIDGE

4. TERRACE

5. EXTERIOR WALKWAY ON GRADE

6. FUTURE SOLAR ARRAY 

7. RELOCATED SUN DIAL

8. ENERGY EFFICIENT HVAC 

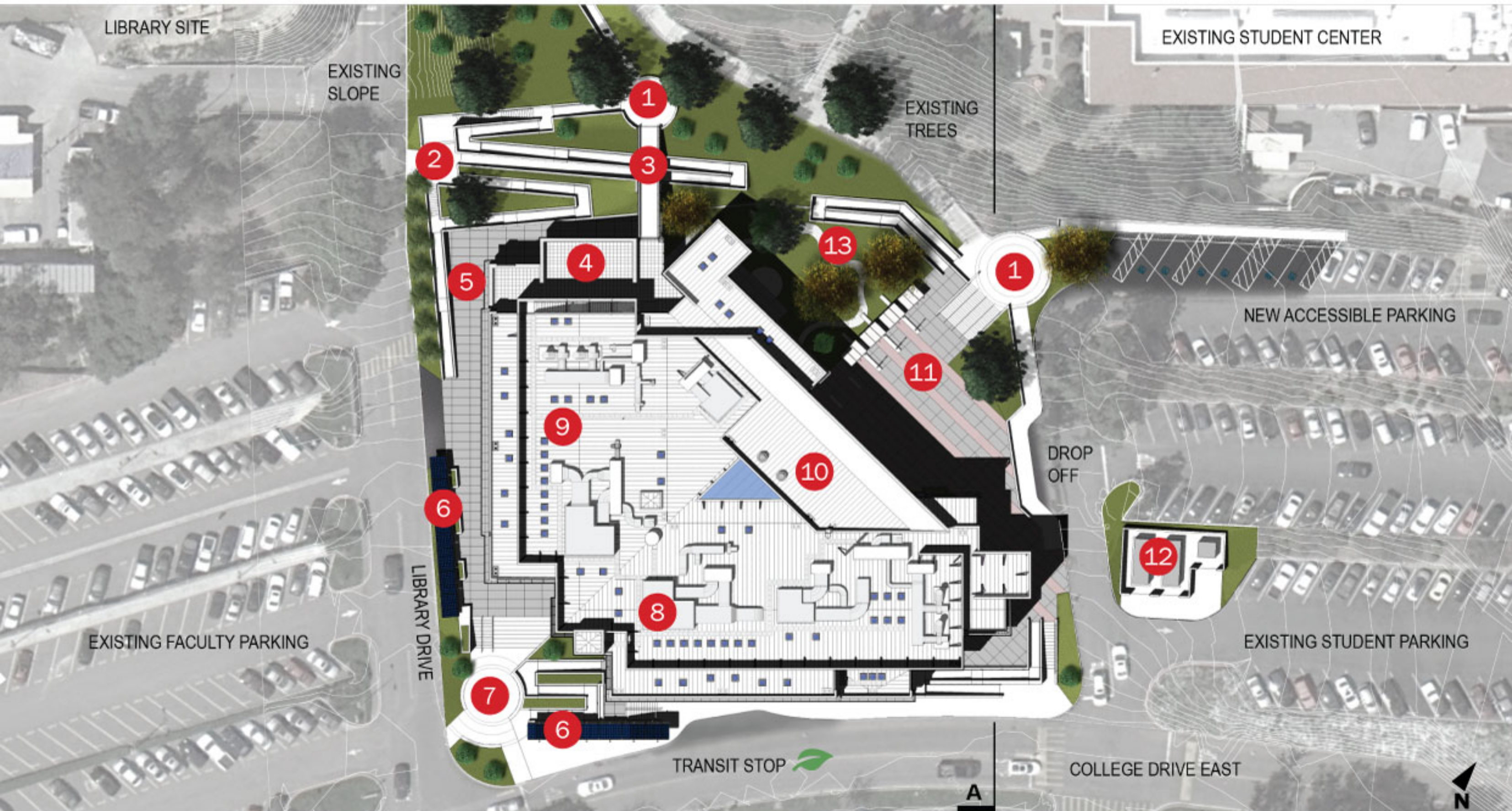
9. TUBULAR SKYLIGHTS 

10. WHITE ROOF 

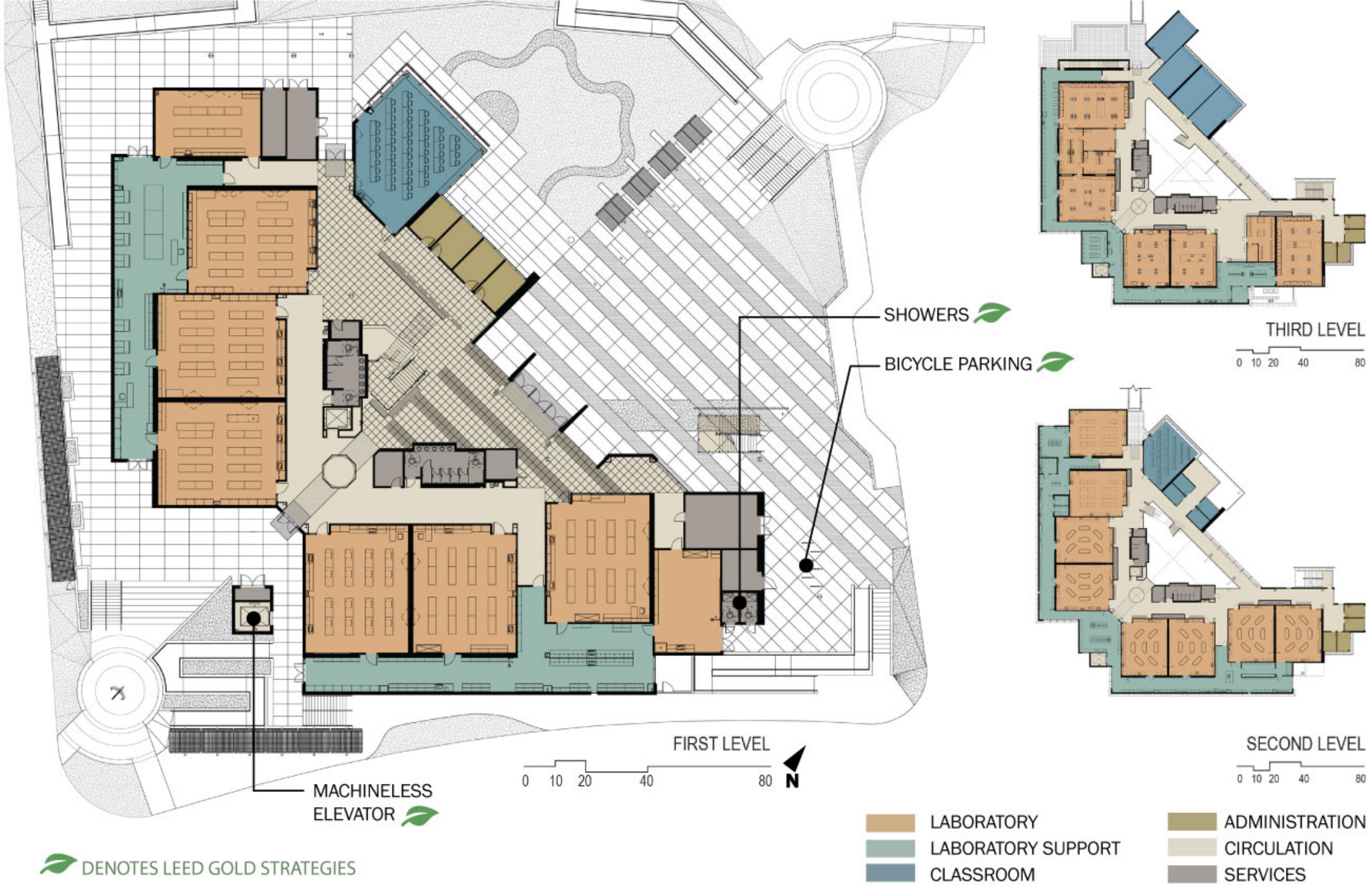
11. EVENTS PLAZA WITH PERVIOUS PAVING 

12. RESOURCE EFFICIENT POWER SOURCE 

13. CALIFORNIA NATIVE GARDEN 



## SITE PLAN



 DENOTES LEED GOLD STRATEGIES

# FLOOR PLANS

## SUSTAINABLE SITES

This former parking lot is close to community amenities, adjacent to public transportation, provides preference for efficient vehicles, incorporates open space, storm water capture and habitat restoration, and reduces heat island effects and light pollution.

## MATERIALS & RESOURCES

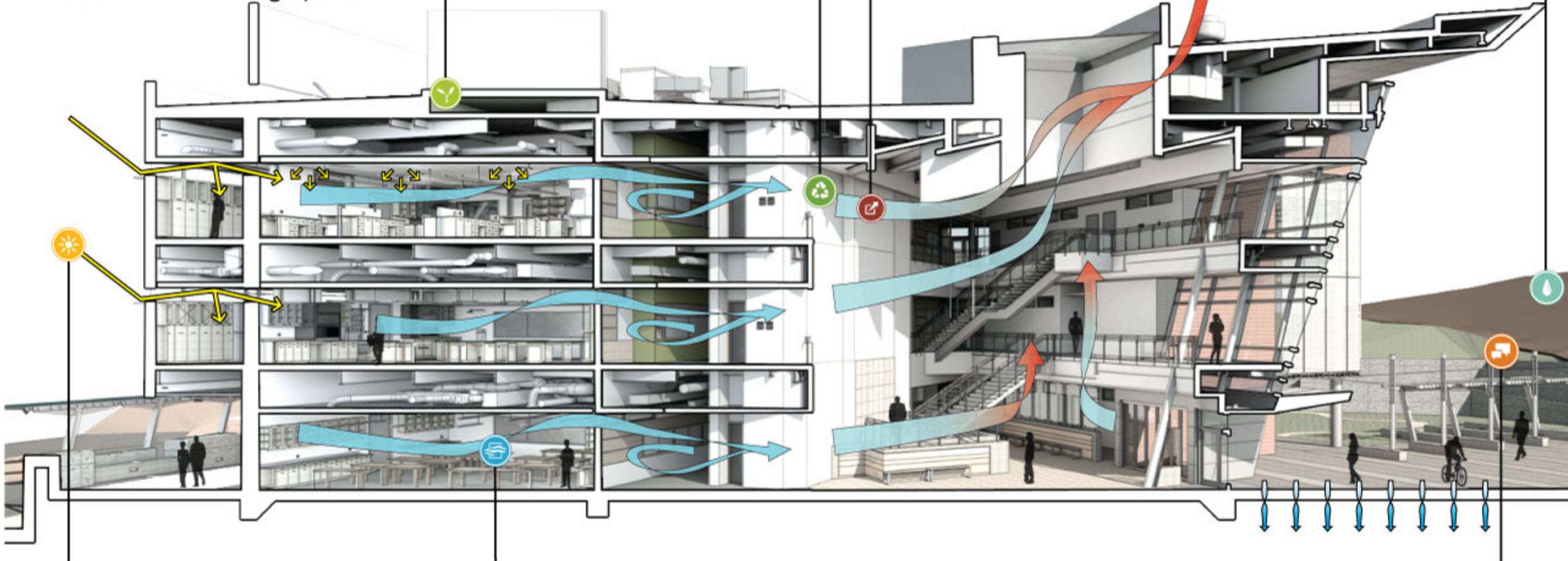
98% of construction waste was diverted from the landfill, 20% of materials are post-consumer recycled, and 20% of materials were sourced within 500 miles.

## INNOVATION

A machine-less elevator saves energy. A 3-story lobby enhances natural ventilation. Sustainable strategies are integrated into the new science curriculum and the FF&E meets green standards.

## WATER EFFICIENCY

Native plants utilize reclaimed drip irrigation. Water efficient plumbing reduces water use by 35%.



## ENERGY & ATMOSPHERE

Efficient lighting, HVAC and glazing systems, daylight harvesting, a high performance building envelope, natural ventilation, building management systems, commissioning, and utilization of green power lead to 23% less energy use than Title 24.

## INDOOR ENVIRONMENTAL QUALITY

Outside air monitoring & 100% outside air is utilized for all spaces. Low emitting products and negative pressurization of spaces mitigates chemical pollution. Daylight sensors and user controlled lighting and thermostats optimize comfort and energy. Monitoring and verification assist with future system fine tuning.

## AWARENESS AND EDUCATION

Landscaping has been selected and grouped into Orange County specific micro-regions for enhanced teaching and demonstration. The design optimizes irrigation. Educational signage and a narrated walking tour, embedded throughout the project, highlight the value of local plant materials.



**EXTERIOR VIEW** NORTH FACADE/MAIN ENTRY





**EXTERIOR ACCESSIBLE RAMP SYSTEM** WEST FACADE



**CONTEXTUAL VIEW**



We can not solve  
our problems with  
the same thinking  
we used when we  
created them.

Albert Einstein

**INTERIOR VIEW** LOBBY



**INTERIOR VIEW** SCIENCE LABS



**INTERIOR VIEW** WORKROOM WITH BORROWED LIGHT