

2

SUSTAINABILITY & RESILIENCE



COLLEGE
of the
DESERT



IMAGE 1.2 | INSPIRATION IMAGE FOR SUSTAINABLE DESIGN



IMAGE 1.3 | INSPIRATION IMAGE FOR SUSTAINABLE DESIGN

2b | SUSTAINABLE DESIGN CRITERIA

These strategies shall be considered and implemented into both renovations and new construction, as the program dictates, code requires, and budget allows:

1. **Passive Design Strategies:** Implement passive design techniques such as orientation, shading, and thermal mass to reduce energy consumption and enhance comfort. (Refer to Chapter 1 – Architectural Massing and Design for more information).
2. **Solar Reflectance:** Specify high Solar Reflectance Index (SRI) coatings for paving and roofing. Limit building materials/colors that absorb and retain heat (with the exception of thermal mass when designed properly).
3. **Energy Efficiency:** Utilize energy-efficient building materials, appliances, and systems to minimize energy consumption and carbon footprint. LEED Silver shall be the standard for all new construction buildings and major renovations. At minimum, all projects shall exceed Title 24 by at least 10%. Buildings must meet the state requirements for Net Zero-ready and Net Zero buildings (See Section 2-C for more information).
4. **Water Conservation:** Specify water-efficient mechanical and plumbing systems and fixtures (See Chapter 9 - Mechanical and Chapter 10 - Plumbing). Integrate water-efficient landscaping practices, such as xeriscaping and drip irrigation, to minimize water usage and promote native plant species (See Chapter 8 - Landscape and Exterior Improvements)
5. **Renewable Energy:** Incorporate renewable energy sources such as photovoltaic panel arrays to generate clean energy onsite.
6. **Waste Reduction:** Implement strategies for waste reduction, recycling, and composting to minimize landfill waste and promote a circular economy. Specify building materials with a high recycled content, and are able to be recycled after the building's life expires, where applicable and legal.
7. **Biodiversity:** Preserve and enhance biodiversity by incorporating native vegetation, habitat restoration, and green corridors throughout the campus.

2b | SUSTAINABLE DESIGN CRITERIA (CONTINUED)

7. Sustainable Transportation: Encourage alternative transportation options such as biking, walking, District-provided tram system (transportation between campuses), ridesharing, and public transit to reduce carbon emissions and promote a healthier campus community. Provide information to students regarding these options. It is important to create welcoming and intuitive campus arrival points and wayfinding routes for different modes of transportation to ensure students feel comfortable utilizing alternative modes of transportation.

8. Community Engagement: Foster a culture of sustainability through educational programs, outreach

2c | COMPLIANCE WITH TITLE 24

The California Energy Code, Title 24 establishes the requirements for efficiency and sustainability within new and renovated construction projects. The Division of State Architect (DSA) which reviews and approves all Community College construction projects (with some minor exceptions) is currently in process of implementing a more strict methodology in checking that projects submitted meet Title 24 (Per recent DSA updates). To meet Title 24 requirements for Community College campuses, various strategies can be implemented across structural, mechanical, plumbing, civil, and electrical systems. To qualify for California Community Colleges Chancellor's Office incentives, design criteria shall *exceed* title 24 by a minimum of 10% for major renovation projects and a minimum of 15% for new construction projects (See also the section entitled State Requirements for Net Zero Buildings and Projects for additional sustainability requirements).

Sustainability strategies to be considered include (but are not limited to) the following:

1. Structural Sustainability Strategies:

- Use sustainable building materials such as recycled steel, concrete with high fly ash content (as acceptable to the design team), and sustainably sourced wood/timber. This helps to reduce the embodied carbon of construction projects, with materials like new concrete, steel, and aluminum having the highest embodied carbon of common building materials, which is a requirement as of August 1, 2024¹
- Consider modular assemblies of materials that can be repeated and dimensionally maximized on projects, with cost savings and lower waste. For example, plywood sheathing and gypsum board.

2. Mechanical Sustainability Strategies:

- Install highly energy-efficient HVAC systems with high Seasonal Energy Efficiency Ratio (SEER) ratings.
- Incorporate energy recovery ventilation systems to minimize energy loss.
- Utilize programmable thermostats and occupancy sensors to optimize heating and cooling schedules.
- Implement efficient insulation techniques to reduce heating and cooling loads.

(Continued on page 6 of this chapter)

1. Title 24, Chapter 5 - Building Standards Commission's 2022 Intervening Cycle. <https://www.dgs.ca.gov/BSC/Rulemaking/2022-Intervening-Cycle>

LEED Certified Projects at College of the Desert

Building Name	LEED Cert.	Date of Cert.
Nursing and Health Sciences	Silver	10/7/2010
Public Safety Academy	Silver	1/1/2011
Nursing Renovation	Gold	10/18/2012
Child Development Center	Gold	1/7/2015
East Valley Center	Silver	1/13/2015
Visual Arts	Silver	9/8/2015
Athletic Facilities	Gold	9/21/2015
Applied Sciences	Gold	1/9/2017

Note: The Indio Expansion Project is targeting LEED Gold Certification. Certification is in progress.

2e | STATE REQUIREMENTS FOR NET ZERO BUILDINGS AND PROJECTS

In addition to requirements for LEED Certification/Equivalency and sustainable design strategies described above, per State of California Executive Order B-18-12¹: Green Building Action Plan incorporated on October 1st, 2018. Community Colleges must comply with the following excerpts (Refer to the full executive order for full language, requirements, and active links):

"All new State buildings and major renovations beginning design after 2025 shall be constructed as Zero Net Energy facilities. 50% of new facilities beginning design after 2020 shall be Zero Net Energy." Note: The best practice for new community college facilities and major renovations being currently designed prior to January 2025 is to be Net Zero Ready. That being said, as of January 2025 Net Zero will be the new design requirement and standard for major facilities on all College of the Desert Campuses.

"State agencies shall also take measures toward achieving Zero Net Energy for 50% of the square footage of existing State-owned building area by 2025."

"Renewable energy generation shall be added to state facilities either onsite, and/or offsite to achieve EO B-18-12 targets by following renewable energy generation prioritization and strategies identified below (Reference full executive order for more information)"

"Existing Buildings – Existing state buildings should strive to achieve high levels of energy efficiency before adding renewable energy to achieve ZNE. Strategies and energy efficiency targets for existing buildings to work to achieve for ZNE are identified in the SAM Section 1815.31 and in Source EUI targets for Existing State Buildings. While state agencies are required to take measures toward achieving ZNE on 50 percent or more of their building area, they should work to achieve high energy efficiency levels in their entire portfolios to the extent cost effective."

More information is available to design teams at <https://www.green.ca.gov/> and other official resources.

1. Full text of Executive Order B-18-12 included as Appendix A, from <https://www.green.ca.gov/buildings/resources/executiveorder/>

2g | DISASTER & EMERGENCY PREPAREDNESS

Being prepared for potential emergencies and disasters and having a plan of action is critical for the safety of administrators, faculty, staff, students and guests. The following strategies related to actionable items for campus built environments shall be given consideration in campus planning, administrative, and facilities development initiatives:

- a. The College has developed emergency preparedness policies and guides, available at the College of the Desert Public Safety website¹. This includes establishing designated evacuation routes, emergency shelters, and communication protocols to facilitate swift and organized responses during crisis situations.
- b. Based on recent facilities assessments, the District should designate the most resilient campus buildings as places of refuge in the event of an emergency or disaster, as well as suitable nearby off-campus facilities. Buildings with seismically sufficient and non-flammable building systems should be given priority for this classification.
- c. Providing emergency generators, and/or other means of backup power, for important campus spaces is critical during an emergency power shutdown (See Section 12 – Electrical, Lighting and Technology)

SELECTED SUSTAINABILITY INSPIRATION IMAGES



IMAGE 1.5 | SUSTAINABLE DESERT CAMPUS (PALM SPRINGS)

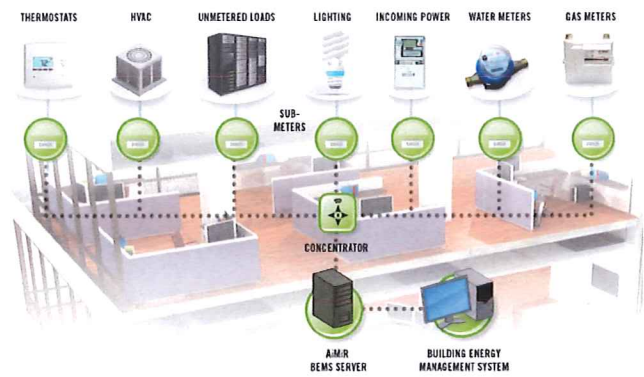


IMAGE 1.6 | BUILDING MANAGEMENT SYSTEM DIAGRAM



IMAGE 1.7 | ELECTRICAL EQUIPMENT REQUIRED FOR BUILDING-INTEGRATED PHOTOVOLTAICS



IMAGE 1.8 | SOLAR PANEL ARRAY AT BUILDING ROOF

1. Emergency and disaster preparedness Information available at <https://www.collegeofthedesert.edu/students/public-safety/policies.php>