

SECTION 01 81 13
Sustainability
Design Standard

PART 1 GENERAL

1.1 PURPOSE

Knowing that public institutions of higher education have the ability to influence the ideals and principles of our future decision makers, San Mateo County Community College District (SMCCCD) holds an important role in promoting sustainability. SMCCCD is passionate about our responsibility to strive for the highest achievable sustainability standards to encourage positive change through example. From a campus-wide level to individual classrooms, our aim is to model a living laboratory from which everyone can learn.

Each campus within SMCCCD has developed its own Sustainability Plan. These plans, along with Campus Climate Action Plans, District-Wide Water Efficiency Program, Storm Water Management program and other guidelines from the District Sustainability Initiative. The goal of the District Sustainability Initiative is to help promote sustainability, drive positive change, and influence future generations to continue to apply sustainability concepts throughout their lives. This Sustainability Design Standard is a key component to the District Sustainability Initiative; helping the District and its constituents align and implement the goals of the District Sustainability Initiative that are germane to campus building projects.

SMCCCD regards capital projects as an opportunity to demonstrate through action our commitment to sustainable design and construction. SMCCCD is driven to provide continued leadership in sustainability. We have received recognition for our efforts including the following:

- A. 2005 Flex Your Power Award for energy efficiency
- B. Receiving energy efficiency rebates in excess of \$1 million for energy conservation measures.
- C. Being cited as the model for San Mateo County schools for best construction practices by the San Mateo Grand Jury.

Recognized by Environment California in August 2006 for our commitment to energy efficiency and reduction in global warming pollution.

PART 2 DESIGN STANDARD

To truly embrace the value of sustainability, equal consideration must be given to environmental, social, and economic excellence. The goals below should be taken into account when designing capital projects for SMCCCD. These goals tie directly to the matrix being provided as Appendix A:

2.1 USE AN INTEGRATED APPROACH TO BUILDING DESIGN & CONSTRUCTION

The best buildings result from continual, organized collaboration among all players. Engage in a collaborative and integrated design process for active and continuing participation of users, design and construction members in SMCCCD building projects.

- A. In the formative design phase, identify sustainability priorities and key milestones in the project timeline.
- B. Pursue LEED Gold certification where applicable.
- C. Perform Life Cycle Cost Analysis on Major Equipment systems and any value engineering proposals.

- D. Apply for all available utility incentives, assist in grant applications, and ensure follow through with all applicable programs including PG&E's Savings by Design.

2.2 TAKE AN ECOLOGICAL SITE DESIGN APPROACH

- A. Land is a crucial component of the built environment and ecological approaches to site design should be employed to minimize negative environmental impacts and support healthy and natural ecological processes while also ensuring that site and building design fit the campus aesthetic and create a unique sense of place. SMCCCD aims to integrate landscape and people with living processes naturally occurring on its campuses. Maintain and restore regional landscaping.
- B. Protect and preserve soil, water, access to daylight, and regional biodiversity.
- C. Limit long term site operating impacts and costs.
- D. Help reduce the reliance of students, staff and visitors on single occupancy vehicle commutes.

2.3 REDUCE FOSSIL FUEL RELIANCE AND RELATED ENERGY COSTS

- A. Implementing strategies to save energy and utilizing renewable energy sources will reduce operating costs and the campus' reliance on fossil fuels. SMCCCD is developing a Climate Action Plan. Climate change is a challenge of sobering magnitude and urgency, which will require society to draw on extraordinary capacity for resilience and innovation.
- B. Prioritize passive strategies.
- C. Exceed T24 energy savings by 15%.
- D. Provide infrastructure for future renewable energy installations and, when possible, on-site renewable energy systems.

2.4 RESPONSIBLY MANAGE WATER

Water is a valuable resource fundamental to health, economy and the environment; in California, water is precious and conservation is critical. SMCCCD plans to manage water on its campuses responsibly and conserve wherever possible.

- A. Meet or exceed SMCCCD's Stormwater Management Plan for reduction of discharge to net zero increase from existing conditions.
- B. Take necessary measures to reduce and eliminate pollutants of concern from entering sensitive waterways.
- C. Provide for "slow, sink, spread" with stormwater management
- D. Prioritize irrigation reduction through appropriate site strategies.
- E. Reduce potable water consumption by 30% below Cal Green baseline
- F. Use reclaimed water for non-potable purposes when possible and infrastructure for future installations

2.5 RESPONSIBLY SOURCE MATERIALS

Responsible sourcing of construction materials provides a holistic approach to supply chain management, product stewardship, and carbon reduction. SMCCCD aims to increase efforts to

procure goods that encompass responsible management for product's social, economic and environmental dimensions.

- A. Select materials with sustainable content (recycled, certified wood, low-emitting)
- B. Responsibly source materials wherever possible (transparent information on extraction and manufacturing)

2.6 MAXIMIZE OCCUPANT COMFORT AND WELL BEING

People spend a majority of their time indoors and therefore, the indoor environment has a significant influence on their health, well-being, and productivity. Student, faculty, and employee's health and comfort directly impacts ability to learn and work productively.

- A. Improve occupant comfort and well being wherever possible
- B. Include measures for monitoring comfort

2.7 REDUCE WASTE

Construction and demolition generate enormous quantities of solid waste and reducing waste as well as diverting waste from the landfill provides financial savings in addition to environmental benefits. SMCCCD aspires to reduce waste all of its construction projects and ensure adequate recycling and composting facilities are designed in their new facilities.

- A. Exceed statewide landfill diversion goal of 75% by 2020

2.8 USE THE BUILT ENVIRONMENT AS A TEACHING TOOL

Showcasing green building and site elements provides experiential learning opportunities and positively influences the campus community to champion sustainability. SMCCCD desires the campus to be a teaching tool in order to raise awareness of sustainability issues and efforts to positively influence the behaviors of all campus community members.

- A. Create opportunities for learning in the built environment by giving design consideration to how building spaces and systems can be used as a real time teaching tool
- B. Provide educational signage and real time dashboards to highlight green building strategies
- C. Provide a detailed list and user's guide to the building's green attributes

2.9 FACILITATE SUSTAINABLE MANAGEMENT FO CAMPUS OPERATIONS

Regardless of how sustainable a building may have been in its design and construction, it can only remain so if it is operated responsibly and maintained properly. SMCCCD is committed to ongoing monitoring of their facilities and operation for continuous improvement opportunities.

- A. Install meters at appropriate locations to monitor ongoing operations
- B. Provide on-going commissioning and operational training
- C. Create policies and plans in a digital format to sustainably manage operations
- D. While all elements should be considered, every project will need to prioritize its own specific sustainability goals.
- E. When it makes sense, the District shall direct its consultants and contractors to pursue external recognition and/or design to external criteria such as:

1. Leadership in Energy and Environmental Design (LEED) Gold Savings By Design (PG&E)
2. Energy Star Certified Building and/or Plant
3. Net Zero Energy Building Certification
4. Living Building Certification

Existing infrastructure, systems, and campus or district wide strategies should be consulted during the building design phase. Achieving the aforementioned certifications may be more likely when the design/construction team are familiar with and integrating ongoing projects such as the District-Wide Facility Management System upgrade, District Wide Exterior Lighting Upgrade, District-Wide EV Charging Station Installation, Cañada Campus Solar Installation and other projects. It is incumbent upon the design team to inquire about ongoing project efforts and request additional information and guidance for integration where deemed appropriate.

PART 3 EXECUTION

San Mateo County Community College District is committed to quality, sustainable projects that are delivered on time and within budget. In order to achieve this, an integrated and iterative process is highly recommended and may be required. Planning for sustainable design and construction should be done with the team starting at the early stages of the project. Below is a list of recommendations to facilitate the sustainable design process.

3.1 DEVELOP A SUSTAINABILITY ACTION PLAN TO INCLUDE:

- A. Designate a dedicated sustainability consultant for each project, and a champion from each team. List the primary points of contact and their backups in the Sustainability Action Plan
- B. Define Roles and Responsibilities within the team
- C. Discuss and Define Communications strategies, protocols, and technologies
- D. Conduct a Sustainable Design Charrette before or during schematic design that includes all major stakeholders; District (Users and Managers), Architect, Engineers, and Contractor. From this meeting, create the following documents:

3.2 CREATE DETAILED OWNER'S PROJECT REQUIREMENTS TO INCLUDE AT MINIMUM:

- A. a list of sustainability goals against which design decisions can be evaluated. Reference any previous data gathered and/or lessons learned
- B. commissioning procedures, steps, and schedules
- C. any external sustainable certifications and criteria to be pursued
- D. a prioritized list including required, desired, and lofty goals
- E. what evaluation tools will be used for analysis
- F. a schedule of deliverables and milestones to be integrated into the overall Project Timeline, which may include such items as OPR, energy model, and LEED documentation
 1. Schedule regular project meetings with an interdisciplinary team and include sustainability goals on the agenda.

2. Iterative energy and cost analysis/ ROI process for major design decisions using tools such energy modeling, water calculators, and life cycle analyses. This should begin in schematic design and be used to actively inform the design, going beyond verification of anticipated performance.
3. Iterative Specification development process. Each section/material should be evaluated against the OPR and the front end sustainable design requirements specification section. Start filling in any material calculators early in the process.

3.3 ASSOCIATED DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS

01 81 13 Sustainable Design Requirements

3.4 OTHER REFERENCES

College of San Mateo Sustainability Plan

Canada College Sustainability Plan

Skyline College Sustainability Plan

SMCCCD Storm Water Management Plan

SMCCCD Water Conservation Program (Aug 2014 Draft)

3.5 APPENDICES

A. Appendix A

Matrix of strategies and tools that provide guidance to the team on incorporating SMCCCD's 9 sustainable design goals listed above into each capital project.

B. Appendix B

Sample completed LEED 2009 v3 scorecard for a typical SMCCCD campus project

C. Appendix C

Sample completed LEED v4 scorecard for a typical SMCCCD campus project

END OF SECTION

(Appendices follow)