OPEN THIS DOCUMENT FIRST: Design Standards Process

Overview:

SCCD has established standards for design and construction to ensure equity and consistency in facilities and for efficiency in operations and maintenance. The Standards consist of Design Standards that are directives and information that Design Consultants should incorporate into their contract documents (drawings and specifications). A few disciplines have also provided Construction Specifications and Typical Details, which should be customized to the design project.

These Standards were developed by the District, with intensive input from District Facilities, Maintenance and Operations personnel, in addition to IT personnel and the Security shared governance Committee for relevant sections. The Standards are based on prior experience at the District and the best practices from other California Community Colleges, and the products selected were carefully evaluated based on criteria that included aesthetics & user comfort, durability, ease of maintenance, sustainable properties/practices and cost.

Purpose:

These Design Standards are a tool to clarify direction and streamline project execution for design professionals, construction managers and other participants in capital improvement projects. They represent the District’s “strong preference” and should be applied, when possible, without compromising the creativity of the overall design. Final disposition, color, size, product choice etc. should conform to the best extent possible where equivalent substitutes are allowed in the Design Standard. If equivalent substitutes are allowed only “if performance and quality equivalency can be evidenced” or the consultant wishes to deviate from the written design standards for other reasons, then the consultant needs to provide evidence/justification and seek District approval as outlined below.

In all cases the written design standards do not diminish or eliminate the standard of care owed by the consultant to SCCD or relieve, in any manner whatsoever, a consultant from any professional responsibility, duty or due diligence required toward that work.

These Design Standards should be incorporated into all Solano Community College (“SCC”, the “College”) projects. Projects include but are not limited to new construction, Tenant Improvements (TI) projects, remodels, and renovations. It is understood that the College could not attempt to upgrade and retrofit all campus facilities in a single massive construction project; such a process would be prohibitively costly and disruptive. Rather, the strategy is for installations to be implemented continually and concurrently in a phased manner, over time and as funding allows, toward a goal of all campuses and campus buildings eventually meeting the same consistent Design Standards.
Design Standards Process:

The following Design Standards Process Guidelines incorporation and approval process provides procedural guidelines to ensure that project-specific design and contractor teams submit and receive approval by authorized SCCD departmental and administrator personnel at defined milestones. This allows for SCCD review, input, and approval as well as documentation of any approved deviations or variances to the Design Standards early in the design process.

Approved deviations and variances from the Design Standards should be conscious and justifiable, provide a solution for a site-specific need or replace outdated/obsolete requirements, and be compatible with other Design Standards. **Proposed deviations shall be submitted to SCCD in writing for review and approval prior to incorporation into the project.** Approved deviations may be project-specific or permanent; if an approved deviation or variance is intended to be permanent the change should be reflected in the associated Design Standard.

Review and Approval

Review and approval by SCCD is required at the conclusion of each of the design phases listed below prior to progressing to the next phase. Documentation required for review includes project drawings and specifications; manufacturer cutsheets, diagrams, and other product data; associated progress cost estimates and written identification of deviations/variances from District Standards Not all projects will include all phases.

Schematic Design

Design professionals should become familiar with the Architectural, Landscape, Sustainability and other Guidelines (found in Book 1 of the Facilities Master Plan) and the District Standards (found in Book 2 of the Facilities Master Plan and on Facilities Website) prior to initiating the design process. While most of the specifics within the District Standards will be reflected in future design phases, there are some aspects reflected in the District Standards that require consideration from the onset of the design process. If any deviations/variables are apparent at this early phase, bring them to District attention for consideration.

Deliverables of this phase are as stipulated in the Contract with the District. In addition for system designs such as Electronic Security and Safety, Fire Alarm etc. provide the following: a written design narrative which describes planned system elements by function and overall design. The narrative should include conceptual device and system floor plan, site layout drawings and functional/operational project planning.

Design Development

This is the phase where the specifics within the Design Standards will need to be reflected and coordinated within the specific project, and any required deviations/variances should be apparent during this phase. Bring all deviations/variances to District attention, in written format, for
evaluation and action as soon as they are determined. Do not assume deviations/variations will be apparent to District personnel during their documentation review towards the end of this phase.

Deliverables of this phase are as stipulated in the Contract with the District. In addition for system designs such as Electronic Security and Safety, Fire Alarm etc. provide the following: refinement of schematic design conceptual elements to provide a greater level of detail of system floor plan, functional/operational project planning and site layout drawings as well as required supporting components such as physical, electrical, MEP, data network, etc.

**Construction Documents**

By this phase the deviations/variances should have already been resolved. If coordination and detailing efforts during this phase require previously unknown deviations/variances from District Standards, bring them to District attention, via written format, for evaluation and action as soon as they are determined.

Deliverables of this phase are as stipulated in the Contract with the District. In addition for system designs such as Electronic Security and Safety, Fire Alarm etc. provide the following: design drawings indicating location, installation details, cabling and interfaces for elements approved in the schematic design and design development phases. This phase includes written device and systems specifications in the current MasterFormat edition as issued by the Construction Specifications Institute. These specifications should clearly describe interfaces between systems or assemblies and interfaces to any other equipment and systems under other Design Standards.

**Project Close-Out**

Deliverables of this phase are as stipulated in the Contract with the District. District should endeavor to update District Standards for any deviations or variances that were approved as permanent during that particular project.

End of Document
DESIGN STANDARD for Basic Fire Protection System Design

Purpose:
The purpose of this document is to standardize the basic elements of the Fire Protection system design process. This design standard has the purpose of creating a consistent application of Fire Protection system design throughout the Solano Community College District therefore achieving a standard of quality for maintenance and reliability throughout all renovation and new building projects.

Design Standard:

Codes and Standards

- California Fire Code
- NFPA 13, Installation of Sprinkler Systems.
- NFPA 14, Standard for the Installation of Standpipe and Hose Systems
- Factory Mutual Approval Guide.
- Local Fire Marshall

All new structures and structures receiving a major modernization will be protected by an approved wet pipe hydraulically calculated automatic fire sprinkler system designed, installed, and tested in accordance with NFPA 13, CCR Title 19, the California Fire Code and local Fire Marshal requirements. The fire sprinkler water connection will be connected to the site fire water service. The design and installation of wet sprinkler system will be by a Design/Build Fire Protection Contractor.

The Contractor is responsible for all hydraulic calculations, stamping of drawings by a California Licensed Engineer in conformance with all the jurisdictions requirements for submittal to local agencies for building permit, coordination with Architect, and getting approval from the AHJ.

Design and furnish all materials, labor and equipment necessary for installation of the hydraulically designed Automatic Wet Sprinkler System throughout the building as generally outlined herein:

- Service main from connection to campus water main to building entrance riser valve assembly (with post indicator shut off valve, back flow preventer and fire department hose connection).
- Required zone control valve assemblies, drain valves, pressure gauges and signs to identify all valves.

- Provide a stock of each type of sprinkler head in a locked box near the main fire riser of each building.

- Water flow and valve supervisory switches with alarm signals to building fire alarm system.

- All piping shall be concealed except in equipment type rooms that have no ceilings. In retrofit project, discuss merits of concealing pipes with the District.

Design based on flow and residual water pressure tests and submit to local and state Fire Marshal for approval prior to installation.

Sprinkler Head Use:

- Exposed, Upright – Mechanical Rooms without ceilings, Equipment Rooms without ceilings, Utilitarian Mechanical Type Shops, Electrical Rooms without ceiling, Telecom Rooms without ceilings.

- Semi-recessed – All removable tile ceilings and hard lid ceilings.

- Concealed – Only in architecturally sensitive locations to match architectural design intent.

- High Temperature – Utilize in all Mechanical Rooms, Electrical Rooms, Telecom Rooms or other areas where high temperatures may be experienced.

- Sprinkler head Guard - Utilize in all Mechanical Rooms, Electrical Rooms, Telecom Rooms or other areas where damage to heads could easily result.

- See sprinkler layout detailed below. In corridors, sprinkler heads are ideally located along the centerline. However priority is given to the location of the light fixtures. In general, the District standards for the suspended acoustical tile ceilings includes a 2’x4’ tile with a routed groove which simulates a 2’x2’ tile. The sprinkler head layout should avoid placing heads over the routed groove, or within 6” of any tee.

Pre-Action Systems:

- Provide in all locations where damage due to water is deemed catastrophic (i.e. data centers). Determination of rooms requiring such shall be made by Solano Community College District as part of a risk mitigation consideration.
• Determine best application of single or double interlock as required and coordinate use with clean agent extinguishing system if required. Use clean agents that match existing inventories. Complete system parameters and design intent shall be coordinated with the Solano Community College District project manager for risk assessment including use of cross zoned detection, VEDA systems, etc.

• All dry sprinkler piping shall be galvanized steel.

Approved Manufacturers:
Not Applicable

Substitutes Allowed:
Not Applicable

Associated Design Standards and Specifications

• All Division 21 Design Standards and Construction Specifications