

C.A.S.H. 26th Annual Conference on School Facilities

Beyond the Bond
Keeping the Promise for School Facilities

Room# 313
Tuesday, March 1, 2005
2:15 p.m. - 3:15 p.m.
Sacramento Convention Center

WORKSHOP #4

**DESIGN STANDARDS - SAVING MONEY &
CREATING PARITY THROUGH
STANDARDIZATION**

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2005 CASH Annual Conference Presentation

DESIGN STANDARDS

Saving money and creating parity through standardization

Presentation Handout:

➤ **Panelists**

- George Durnay
 - Director of Maintenance & Operations, Vacaville Unified School District
 - 28 years with the District
 - 15 years of experience as Director
 - Provides the District's perspective
- Jeff Kennedy, Architect
 - K-12 Education Studio leader with Murray Downs Architects
 - 18 years of experience with MDA focused on K-12 schools
 - Provides the project architect's point of view
- Mike Wassermann, AIA, CSI, LEED-AP
 - Founding Principal of Capital Program Management, Inc.
 - Over 20 years experience with Californian K-12 education facilities
 - Writing School District design standards for 7-years
 - Provides author's point of view

➤ **Mission Statement**

- Learn what design standards are, how they are created and why it is beneficial to have them...
 - Saves Time
 - Saves Money
 - Provides Consistency
 - Creates Parity

➤ Introduction to Presentation

- The question we are going to address is: Can your District afford not to have design standards?
 - All districts undertaking multiple construction projects benefit:
 - Helps create parity between campuses.
 - Provides clear and consistent programming information
 - Identifies standardized products and systems that reflect life-cycle cost, not just initial cost.
 - Specifies products you want: low maintenance, proven, reliable and durable products.
 - Limits the number of different products your District will need to:
 - Provide maintenance on
 - Stock replacement parts for
 - Be knowledgeable about

➤ Body of Presentation

- **What are Design Standards?**
 - A document that provides standardized design criteria for the District staff, architects and their engineers.
 - A document that provides information for incorporation into the drawings.
 - A document that expresses needs and desires with respect to:
 - Design features
 - Quality and type of materials
 - Systems to be incorporated into the various designs
 - A document whose content is tailored to meet specific client needs.
 - A document that addresses design criteria for all disciplines:
 - Architectural
 - Structural Engineering
 - Civil Engineering
 - Landscape Architecture
 - Mechanical Engineering
 - Electrical Engineering
 - Specialty Consultants:
 - Technology / Low Voltage Systems
 - Hardware
 - Kitchen
 - Acoustics

- A document that provides general and specific design and procurement information for all different types of projects.
 - Some General Examples of Design Standard Items:
 - “C.H.P.S. certification required...”
 - “Buildings shall be constructed with durable permanent materials...”
 - “Campuses to be Master Planned to accommodate future buildings and portable classrooms with service infrastructure...”
 - Some More Specific Examples of Design Standard Items:
 - “Sloped roofing shall be metal...”
 - “Exterior doors shall have vision lites...”
 - “Transformers shall be roof mounted...”
 - Some Examples of Procedural Requirements:
 - “Prior to proceeding with Construction Documents submit schematic design approval of reconfigured toilet room...”
 - “Prior to proceeding with Landscaping Plan submit and obtain approval of planting list...”

- **What are Master or Outline Specifications?**
 - Project Specifications contain *project-specific* information whereas “Master Specifications” is a general document that is used *District-wide*.
 - The Master Specifications document serves as the base document that is edited for each specific project.
 - This document provides *product* information for incorporation into the project *specifications*.
 - The Master Specifications document includes complete specification sections to be edited by design professionals to make project specific.
 - This document is beneficial on long programs that allow “lessons learned” to be incorporated and specific proven specifications developed.
 - Minimizes change order exposure
 - Minimizes coordination issues with multiple architects
 - Outline Specifications provide limited information.
 - Limits items to those of concern.
 - More cost effective to prepare and maintain.
 - Allows the design professionals to use their standard “in-house” master specifications.

- Are Master Specifications an Independent document or part of Design Standards?
 - Typically the two go hand-in-hand
 - One addresses design criteria for the project
 - The other addresses criteria for products to be incorporated into the project.
 - Some instances do not warrant both design standards and master or outline specifications
 - If program doesn't include any "design" (modernization only)
 - Sometimes the design standards include the product information in adequate detail

- **What are Different Types & Components of Design Standards?**
 - Narrow and Broad Definitions
 - Key is to determine specific program needs and results desired
 - Can be very prescriptive or very loose or anywhere in between
 - More prescriptive provides more uniformity, more cost control
 - More loose allows designers more flexibility or creative freedom.
 - Different Types of projects:
 - New Construction
 - Modernization or Renovation
 - Modular Building Standards
 - Portables
 - Interim Housing
 - Different Topics:
 - Furniture and Equipment Standards
 - Drawing Standards
 - Standardized Details:
 - "Pet Peeves"
 - Planting Details
 - Electrical Pull Boxes
 - HC Curb cuts
 - Special Conditions
 - Checklists:
 - Phased Procedural Requirements
 - List of items that need to be obtained
 - List of items that require coordination
 - List of items that require Owner review
 - DSA Closeout Requirements

- **Why Have Design Standards and Master Specifications?**
 - Key to a successful program
 - Essential to maintaining uniformity among projects
 - An effective tool to convey District's desires to multiple design teams.
 - Provide equity among campuses throughout the District.
 - What happens without them?
 - Many different products to maintain, be trained on, stock parts
 - Some products get specified that require high maintenance or early replacement
 - District staff asked repetitive questions from multiple architects
 - Or worse, not asked at all...
 - Vendor solicitations
 - Ensure uniformity of approach to the projects by the various design teams
 - Provides consistent direction to design professions
 - Avoids misunderstandings
 - Provides documentation
 - Part of AE Agreement
 - Provides an opportunity to incorporate "lessons learned"
 - Addresses problems in an organized way
 - Helps to avoid repetitive mistakes
 - Enables collaborative Process
 - Budget Controls
 - Establishes quality level of projects
 - Provides Owner control over budget decisions
 - Initial cost
 - Maintenance cost
 - Replacement cost
 - Life-cycle cost
- **How are Design Standards & Master Specifications Developed?**
 - A Lot of Collaboration!
 - Start with appropriate base document(s)
 - Merge any current District information with base document
 - Refine District base document through a collaborative effort with all stakeholders:
 - Facilities Director
 - Director of Maintenance and Operations
 - Appropriate lead technicians and District staff
 - Consulting Architects and Engineers

- Specialty Consultants
 - Product Manufacture Representatives
 - Installers
 - Contractors
 - Peer Meetings
 - Meet with and refine draft document
 - Distribute for feedback purposes to stakeholders
- Material & Product Selection:
 - Proven track record
 - Life cycle cost
 - Durability
 - Ease of maintenance
 - Compatibility with existing systems
 - Value engineering
- Important Items to Consider:
 - Help Owner make informed non-biased decisions
 - Holds A/E team to specific standards while still allowing design flexibility.
 - Leave creativity to site specific design professions
 - Not a take-away
 - Enhancement of programming
 - It is a tool to help
- Collaboration:
 - The more input, the better the outcome
 - Be open to other ideas
 - Learn what works and doesn't work for others
- **How are Design Standards Used by Design Team?**
 - Starts with reading them!
 - Make list of questions and suggestions
 - Meet with District to ensure all is understood
 - Use checklists
 - Use for internal Quality Control reviews at each phase

- **How are Design Standards & Master Specifications Enforced?**

- Include as an Exhibit to the AE Agreement
 - By “reference only” typically
- Board Resolution to adopt Design Standards & Master Specifications
 - Single Source & the Public Contract Code:
 - Legal provided it is justified
 - Full Disclosure Critical:

“The specifications for this project include particular systems, products and/or materials that have been specifically identified by brand or trade name and for which no “or-equals” or substitutions are allowed. Pursuant to California Public Contract Code section 3400(b)(2), the District has determined that those systems, products and/or materials are required to match other systems, products and/or materials in use on existing District construction projects either completed or in the course of completion.”

- Creates an authority for requiring compliance
- Use as tool for Plan Reviews

- **Maintaining the Design Standards and Master Specification**

- It is a “living” document that requires maintenance:
 - Incorporate new products and technologies
 - Remove discontinued products
 - Code changes
 - Obtain and incorporate feedback from District stakeholders:
 - “Lessons Learned”
 - Incorporate and benefit from lessons-learned at other districts.
- All proposed changes needs District approval
 - Need to have process in place to track changes

➤ **Conclusion of Presentation**

○ **What to look forward to?**

- Uniformity of Designs, Products and Building Systems
- Equity Among Campuses
- Cost savings
 - Reduced Operating Costs:
 - Use of proven, low maintenance, durable products.
 - Reduction of replacement parts stock.
 - Reduced need for staff training.
 - Energy Savings.
 - Time and cost savings due to a reduction in project change orders.
 - Time and cost savings by minimizing repetitive project programming.
- “Plan, Execute and Succeed”
 - A lot of upfront work, planning, saves a lot of work and time down the road and ultimately yields a superior finished product for less money.
 - Saves Time
 - Saves Money
 - Provides Consistency
 - Creates Parity

▪ **Contact Information**

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