

C.A.S.H. 26<sup>th</sup> Annual Conference on School Facilities

**Beyond the Bond**  
**Keeping the Promise for School Facilities**

Room# 317/318  
Tuesday, March 1, 2005  
2:15 p.m. - 3:15 p.m.  
Sacramento Convention Center

**WORKSHOP #7**

**M&O IN NEW CONSTRUCTION AND  
MODERNIZATION**

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# Beyond the Bond

Keeping the Promise for School  
Facilities

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# Beyond the Bond

Workshop #7:  
Maintenance and Operation in New  
Construction and Modernization

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## Beyond the Bond - Presenters

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## Val Verde Unified School District

- Approximate Size
  - 60 square Miles
- Number of Schools
  - 12 Elementary Schools
  - 3 Middle Schools
  - 2 High Schools
- Average Daily Attendance
  - 19,000??

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# Modernization

## District's View

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# Modernization

- Maintenance and Operations is here to help...
  - Make the decision to help
  - Direct employees to help
  - Go to construction meetings
  - Allow staff to do site walks with contractors, architects, and construction managers
  - Share as-builts
  - Offer any history about the project site

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## Assignment of Staff

- What do you need to watch for?
  - As-builts Inspector of Record (IOR) his/her standards/quality control
  - Security for students/staff
  - Fencing/parking
  - Student drop-off area – are they effected?

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## Assignment of Staff

- Temporary housing coordination with the site staff and principal
- Help your constructions staff keep district staff and students out of construction area.
- The “Lookie-Lous”

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## Technical Areas to Watch

- Plans and Specifications
  - Take time to review plans and specifications
  - Verify if your standards are in the specifications
  - Offer value engineering

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## Technical Areas to Watch

- Make sure the entire scope of work ties into your existing equipment:
  - EMS
  - Lighting
  - Irrigation control
  - Fire and Intrusion alarm
  - Phone system
  - Intercom, clock and signal

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## Landscaping

- Verify all areas have been included...
  - Planting of fields
  - Lay down areas – are they repaired and replanted in full

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## Landscaping

- Be sure to check the time of year for finishing of the project and ensure that proper planning is taking place
  - If the project ends in the winter, you will need to sod, not seed
  - You also need bigger trees and tougher shrubs for winter as opposed to summer

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## As-builts and Close Out Docs

- Verify as-builts with the IOR and construction manager
- Make sure you have all documents and phone numbers before your construction manager moves their trailer out...
  - Warranties
  - Keys
  - Manufacturer's documents
  - Cell phone numbers

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## Modernization

Architect's View

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## The Pre-Design Phase

- Start up meeting with M&O present
- M&O input on project scope of work
- M&O input on project budget
- M&O input on schedule

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## The Pre-Design Phase

- Request/Assemble Background Documents
  - District standards
  - As constructed documents
  - Environmental/soils reports, etc.
- Walk Site/Buildings with M&O Staff
  - Hidden landmines?
- Field Verification & Photo Documentation
  - Particularly important with modernizations

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## The Pre-Design Phase

- Review recommendations for the following consultants to be hired by the District:
  - Soils Engineer
  - Geo-Hazard Report
  - Topographical Survey

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## The Pre-Design Phase

- Review suggested engineering consultants that will be part of the A/E Design Team:
  - Civil Engineer
  - Landscape Architect
  - Hardware Consultant
  - Structural Engineer
  - MPE Engineer

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# The Programming Phase

- Establish Ed Spec committee
  - Include M&O staff
  - Administrators, principals, teachers, public members
- Conduct programming meetings, including:
  - Staff making the repairs to HVAC, etc.
  - Hardware specialists
  - Landscape/Irrigation personnel

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# The Programming Phase

- Walk existing sites & buildings with committee
  - Limitations of existing conditions
  - Cost impacts of each decision to modify existing buildings
- Develop Ed Specs
- Importance of M&O personnel to see and hear the intended functions of each room, and to give input

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## The Schematic Design Phase

- Update Project Budget
- Update Project Schedule
- Obtain or Develop District Material and System Standards

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## The Schematic Design Phase

- Initiate Agency Contacts & Service Capability Review
  - Electrical Utility
  - Water District
  - Gas Utility
  - Sewer Utility
  - Flood Control District
  - Fire District
  - Health Department
  - Cable TV, Telephone, etc.

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## The Schematic Design Phase

- Review owner provided reports for design criteria
- Prepare schematic design
- Prepare outline specifications
- Conduct preliminary design review with DSA & local fire department

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## The Schematic Design Phase

- Evaluate need for interim housing
  - Portable classrooms
  - Duration of each phase
  - Safe passage for students while construction occurs
- Prepare project Implementation/Phasing Plan

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## The Design Development Phase

- Update Project Budget
- Update Project Schedule
- Update/Prepare Preliminary Specifications
- Define Bid Packages
- Define Potential Alternates and Base Bid Concepts
- Update/Prepare Phasing Plan

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## The Construction Documents Phase

- Update Project Budget
- Update Project Schedule
- Update Project Delivery Method
- Conduct Consultant Coordination Review Meetings
- Obtain Will-Serve written confirmation from Utility Companies
- Obtain/Confirm Site Access/ Fire Flow Approval
- Perform Coordination Review
- Quality Assurance Review

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## The Agency Approval Phase

- List all District staff and Board approvals required
- List all Agency approvals required
  - Division of the State Architect
  - California Department of Education
  - Office of Public School Construction
  - Local Agencies
- Coordinate Bid Documents (“Front End” Documents)
- Obtain final approval from all agencies

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## The Bidding Phase

- Meet with owner to confirm bid schedule
- Verify all bid documents have been reviewed and approved
- Evaluate schedule for unique weather/sequence issues
- Assist in bid documents release and notification to publications and potential contractors

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## The Bidding Phase

- Attend Pre-Bid Meeting and Job Walks
- Attend Bid Opening
- Review Contractor Bid Submittals

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## The Construction Phase

- Attend Pre-Construction Meeting
- Assign Construction Administration Staff
- Assist/Review Schedule of Values and Applications for Payment
- Assist/Review Submittals and Substitutions

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## The Construction Phase

- Attend Job Site Meetings
- Monitor Construction Progress
- Update Project Budget & Schedule

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## The Project Closeout Phase

- Establish timelines for obtaining all closeout documents
- Review list of required closeout documents
- Assign responsible parties for each task on the Project Closeout list
- Do not punish the parties who have completed their part of the closeout process
- Coordinate/Attend meetings with various agencies required for closeout of the project

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# Modernization

## Construction Management's View

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# Modernization – What's in it for me?

- Administrator in Charge
  - Reduce change orders
  - Assure District standards are maintained
  - Avoid increased maintenance costs

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## Modernization – What's in it for me?

- Head of M&O
  - Assure current District standards are maintained
  - Avoid increased maintenance costs
  - Gain acceptance as a key team member
- Program/Construction Manager
  - Gain knowledge otherwise not available
  - Avoid delays during construction

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## Modernization – How do we benefit?

- What does it take to gain benefits?
  - Commit qualified personnel to the project
  - Commit personnel at the start of the design process
  - Instruct architect and construction manager to accept M&O as a partner

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## Modernization – How Much Time?

- Full-time not required
- Preconstruction
  - Attend periodic design review
- Construction
  - Attend weekly jobsite meetings

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## New Construction

District's View

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## New Construction – The Difference

- No students or staff at site
- Developer concerns
- New services
- State and local agencies
- Standards and design

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## Your Time to Design

- Windows
- AC unit
- Carpet
- Playground
- Roofing
- Multi-Purpose Room  
Position
- Fencing
- Daylights
- Energy
- Locks
- Keys
- Safety

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## Standards – How to Get Them

- Change if necessary
- Discuss with your County Office of Education on their interpretation of the law

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## Standards – How to Get Them

- You must have your board adopt district standards
  - This empowers your design team
  - You can hold your design team responsible
- You have a risk of cost escalation and price fixing

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## Big Ticket Examples

- Air Conditioning Units
- Roofing
- Flooring
- Door Hardware
- Controls

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## No-Brainer Standards

- Flush valves
- Ceiling tiles
- Hand dryers
- Partitions
- Paint
- Irrigation controls
- Flag poles
- Playground false surfaces

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## Review of Standards

- Do they cost or save you money?
- Be sure to life-cycle cost your standards
- Make sure the company has been in business for a long time and have a well known history

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## Close Out Documents

- Hold responsible the...
  - Construction Manager
  - Inspector of Record
  - Architect
- Be sure that you get all your warranties, as-builts, cell numbers, and close out docs **before the construction manager moves their trailer out**

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# New Construction

## Architect's View

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# New Construction Projects

## **Differences in New Construction Projects vs. Modernization**

- No students or staff on site – yet!
- Site issues
  - Infrastructure availability
  - Timing of infrastructures
  - Safety concerns for getting students to the site
  - Coordination with developers
  - Coordination of off-site issues
  - Conditions of approval from local cities and agencies
  - Environmental issues

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# New Construction Projects

## Differences in New Construction Projects vs. Modernization

- Developer Concerns
  - Location of the school site
  - Timing of the development
    - School sites can change location as the development progresses through the review process
    - Multiple site plans and designs may be needed
  - Access roadways and ingress/egress from the site

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# New Construction Projects

## Differences in New Construction Projects vs. Modernization

- Developer Concerns
  - Developer Standards vs. District Standards
    - M&O input regarding necessary materials & systems
  - Coordination of the exterior look of the buildings with the style of the development

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# New Construction Projects

## Differences in New Construction Projects vs. Modernization

- District Concerns
  - Location of the school site
    - Review by CDE
    - Review by Design Team
    - Review by District, including M&O staff
    - Cost concerns of the site

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# New Construction Projects

## Differences in New Construction Projects vs. Modernization

- District Concerns
  - Timing of the Development
    - School sites can change location as the development progresses through the review process
    - Multiple site plans and designs may be needed

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# New Construction Projects

## Differences in New Construction Projects vs. Modernization

- District Concerns
  - OPSC Funding of the Site Improvements
    - Service Site Development
    - Off Site Development
    - Utility Services

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# New Construction Projects

## Differences in New Construction Projects vs. Modernization

- District Concerns
  - OPSC Funding vs. Conditions of Approval from Cities
    - Requirements from cities that do not “fit” the OPSC guidelines for funding
    - Cost escalation & limited funding
    - Unforeseen conditions

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# New Construction Projects

## Differences in New Construction Projects vs. Modernization

- Design Team Concerns
  - Communication among all parties
    - District staff, including M&O
    - Developer personnel
    - Agency personnel
    - Design Team Consultants
    - Land Acquisition Consultants

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# New Construction Projects

## Differences in New Construction Projects vs. Modernization

- Regular group meetings help everyone stay in touch
- Understand it is a moving target if site has not been fully developed

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# New Construction

## Construction Management's View

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# New Construction-What's in it for me?

- Administrator in Charge
  - Assure District standards are maintained
  - Avoid increased maintenance costs
  - Reduce design elements that are not cost effective

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## New Construction-What's in it for me?

- Head of M&O
  - Assure current District standards are maintained
  - Avoid increased maintenance costs
  - Avoid initial cost saving measures that will detract from usability of the facility
- PM/CM
  - Gain ally for value engineering or constructability/usability review

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## New Construction—How to benefit?

- What does it take to gain benefits?
  - Commit qualified personnel to the project
  - Commit personnel at the start of the design process
  - Instruct architect and Construction Manager to accept M&O as a partner

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## New Construction – How Much Time?

- Full-time not required
- Preconstruction
  - Attend periodic design review
- Construction
  - Attend weekly jobsite meetings

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## Big Picture - Key Points for Success

- Commit qualified M&O personnel
- Provide M&O experience and knowledge at start of design
- Instruct architect and CM to promptly review any request or position presented by M&O, and convene a decision meeting if necessary to resolve
- Have M&O promptly review any initial cost savings proposals by architect or CM for long-term effect

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