



# Green California Community College Summit

Don't Be Stopped by "Analysis Paralysis" - Get it Done.  
**Managing Large Scale Multi-Campus Construction**

October 11, 2010

# Outline

- District Demographics
- District/College Wide Planning
- Design Considerations
- Capital Construction Considerations
- New Technologies and Hidden Impacts
- Project Pitfalls
- Keys to Success

# San Mateo County Community College District

- Three Campuses (1.4M GSF / 346 Acres)
  - **Cañada College – Redwood City - 1968**
  - **Skyline College – San Bruno - 1969**
  - **College of San Mateo – San Mateo – 1963**
  - **District Office – San Mateo - 1978**
- 25,000 Students / 1,000 Staff / Adjuncts
- Capital Improvement Program
  - **Multiple Funding Sources**
    - **Measure C \$207 Million (2001)**
    - **Measure A \$468 Million (2006)**
    - **State / Local Resources \$75 Million\***

**\* \$20M Lehman Brothers / \$54M State**

# Cañada College

Building Renewal, Renovation, and New Construction Status

-  **Completed**
-  **In Progress**
-  **Not Funded**
-  **Undetermined**

The colors depicted on the buildings represent the percentage of the building that has been completed; not necessarily the area within the building where work has been performed



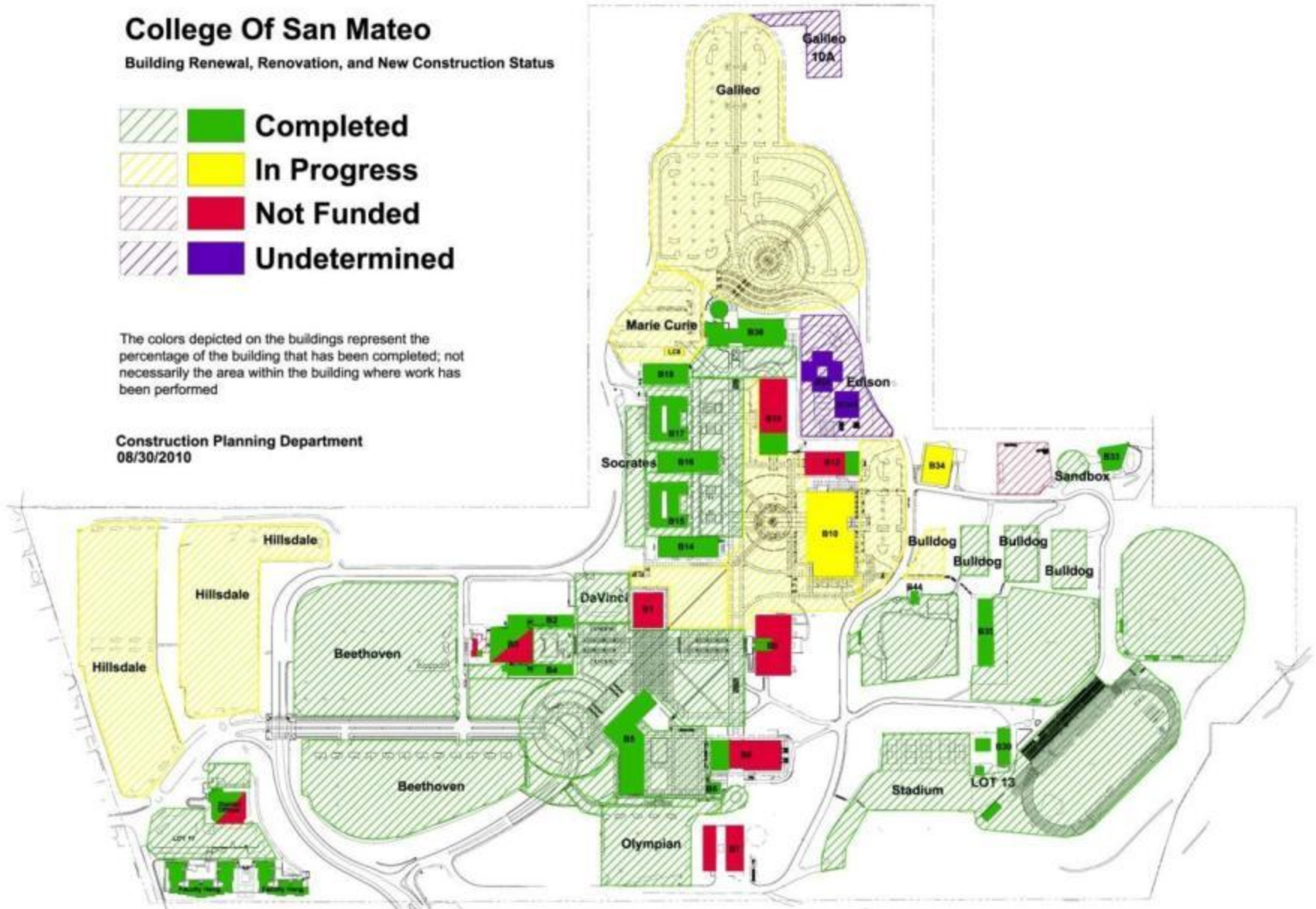
# College Of San Mateo

Building Renewal, Renovation, and New Construction Status



The colors depicted on the buildings represent the percentage of the building that has been completed; not necessarily the area within the building where work has been performed

Construction Planning Department  
08/30/2010

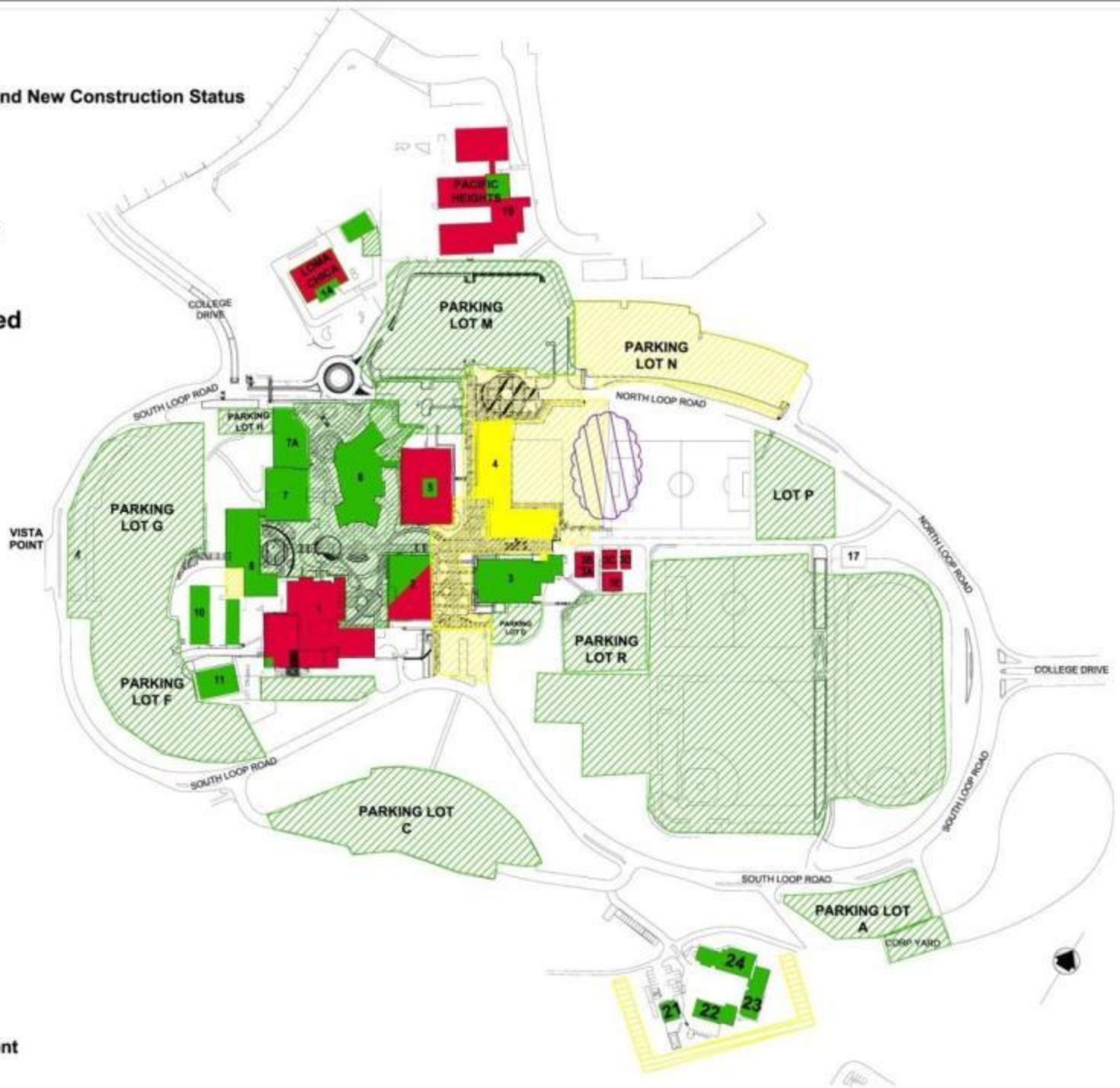


# Skyline College

## Building Renewal, Renovation, and New Construction Status



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# District/College Wide Planning

*“The Plan is Nothing and Planning is Everything.”*

Who is involved?

- Board of Trustees
  - **Is it Legal?**
- Chancellor/College President
  - **Where is the Common Sense?**
- Budget Officers (First time vs. On-going)
  - **We Don't have the \$\$**
- Facility Managers (Life Cycle Cost)
  - **We Don't have the time**
- Design Team
  - **It's per Code and Not Best Practice**
- Contractors
  - **It will kill our schedule**
- Users (Faculty, Staff, Students & Community)
  - **We've never done it that way**

# District/College Wide Planning

*“The Organization that Fails to Plan, Plans to Fail.”*

## Affecting Factors & Challenges

- Funding Pressures
- Aging Facilities and Infrastructure
- Year Round Operation
- Environmental Laws
- Changing Roles of Utility & Energy Management
- New Digital Systems
- Changing Role of Trustees
- Internet and use of other technologies



# District/College Wide Planning

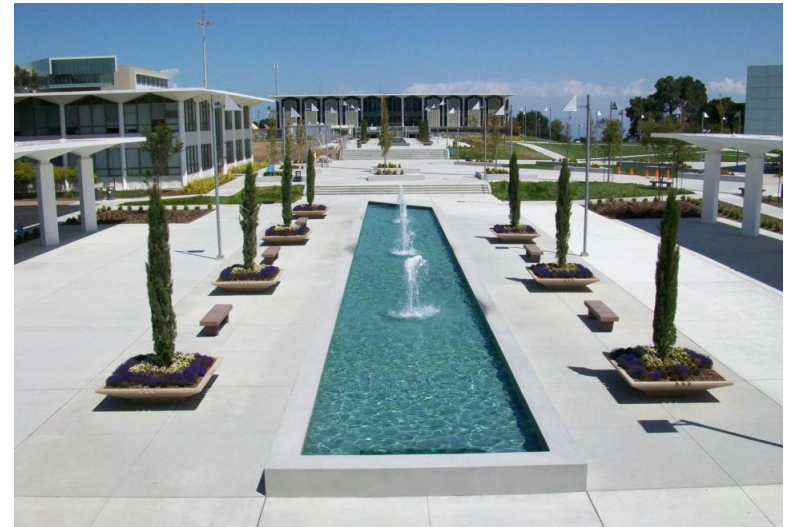
Whole Facility Infrastructure Approach: Out of Sight - Out of Mind

- Water
  - **Potable Water**
  - **Non-Potable Water**
  - **Irrigation**
  - **Fire Protection**
- Drainage
  - **Sanitary Sewer**
  - **Storm Drain**
  - **Rain Water Collection**
- Electrical
  - **Electrical Distribution**
  - **Emergency Power**
  - **Exterior Lighting**
- HVAC
  - **Chilled Water**
  - **Steam**
  - **High Temperature Hot Water**
  - **Natural Gas**
  - **Instrument or Control Air**
- Information
  - **Telephone**
  - **Fire Alarm**
  - **Security**
  - **Cable/Satellite TV**
  - **Video**
  - **LAN**

# District/College Wide Planning

## Energy & Utilities: Poor Job of Telling the Story

- Usage Trends & Consumption (Gas, Electrical, Water, Waste)
- Aging Facilities & Physical Plant
- Chilled Water Systems (Closed Loop)
- HHW System (Closed Loop)
- Commissioning
- New Systems (Relatively)
  - **Geothermal Storage**
  - **Evaporative Cooling**
  - **Photovoltaic**
  - **Co-Generation**
  - **Energy Wheels**
  - **Ice Storage**
- Automation/ Building Management System (BMS)



# Design Considerations

## DSA Buy In Approach - Forward Thinking

- **Schedule early and appropriate meetings**
- **Include District (Owner) Participation**
- **Establish a contact person at DSA**
- **Establish firm agreed upon DSA submittal dates**
- **Involve structural engineer and other key consultants**
- **Require attendance of designated plan checker**
- **Follow requested procedure and information for submittals**
- **Document Meetings and agreed upon discussions with attendees**
- **Do not commit to what you can't deliver**

# Design Considerations

Plan Reviews - Have your fingerprints on what counts

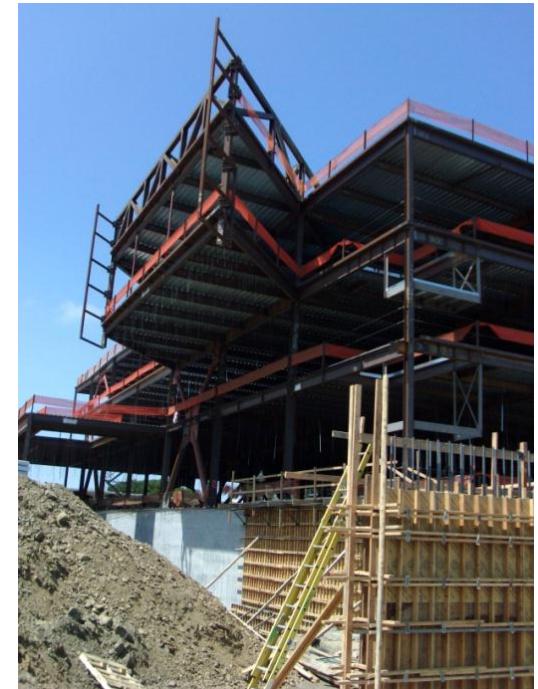
- **Why**
  - **Insures Campus Standards are Followed**
  - **Confirm/Challenge Design**
  - **Code Review**
  - **Model Situation with Standards**
- **Benefits**
  - **Includes Stakeholders**
  - **Insures Quality**
  - **Establishes Expectations**
  - **Verify Design Intent**



# Design Considerations

## Digital Tools - The Age of Zeros and Ones

- Web
  - **Electronic Bids/Addenda/Posting**
- Project Specific Website
- Plan Rooms
- File Viewing & Sharing
- Project Management Software
- Online Prequalification
  - **GCs / A&Es**



# Design Considerations

Facility Managers/M&O Staff - Need to be engaged

- Programming
- Plan Reviews
- Building Systems
  - **HVAC**
  - **Electrical**
  - **Plumbing**
  - **Flooring**
  - **ITS**
- Submittal Reviews
- Systems Life Cycle Cost Analysis
- New Technologies



# Design Considerations

## Designers: Ten Deadly Sins

1. Team Changes
2. Multiple Contacts
3. Schedule Delays
4. Over Design
5. Lack of Field Verification
6. Low Quality Documents
7. Slow Response
8. Slow Reviews
9. Weak Leadership
10. CLOSE OUT



# Design Considerations

A&E Consultants - Let's Get Passionate about what we do

- BIM (Design – Construction – M&O)
- Sustainability/LEED
- Dotted Line
- Discipline Coordination (Subs)
- Document Reviews
- Reimbursables
- Permitting Authority Coordination
  - **Local Agencies**
  - **DSA**
  - **Fire Marshall**
  - **CEQA**
- Additional Fees/Add Services





# Capital Construction Considerations

## Administration - Move the Paper

- Procurement
  - **Contracts/POs/REQs/Approvals**
- Financial Management
- Contract Management
- Consultant Management – Multiple A&Es
- Contractor Management – Multiple GCs/Subs
- Document Controls
- Owner Controlled Insurance Program (OCIP)
- A&E Prequalification
- Contractor Prequalification
- Project Labor Agreement



# Capital Construction Considerations

## Never Ending Coordination - Great Communicator

- Multiple Contractors / Designers / Schedules Coordination
- Inter-Agency Coordination (DOF/CCCO/DSA/State & Local Fire Marshals/Water Board)
- Communications (Different Constituencies)
  - **Campus Community**
  - **Design & Construction Community**
  - **State & Local Entities**



# Capital Construction Considerations

“Good to Great requires transcending the curse of competence.”

## Nuances/Distractors

- Parking
- Road and Pedestrian Path Closures / Detours
- Traffic
- Dirt and Dust
- Noise (Mitigations)
- Interruptions in heat, power, water, data
  - **Scheduled and Unscheduled**
- General Inconvenience
- Safety



# Capital Construction Considerations

“Confront the most brutal facts of your current reality.”

Schedule - Bold Hairy Audacious Goal (BHAG)

- Project Schedule
  - **Look Ahead - Milestone Schedule/Critical Path**
- Ambitious vs. Conservative
  - **Fast-track**
  - **Normal Schedule**
- Academic Calendar
  - **Start of Classes**
  - **Spring Break**
  - **Finals**
  - **Commencement**
  - **Special Events**
- End User Wild Card



# Capital Construction Considerations

## Owner Requirements - Think Ahead

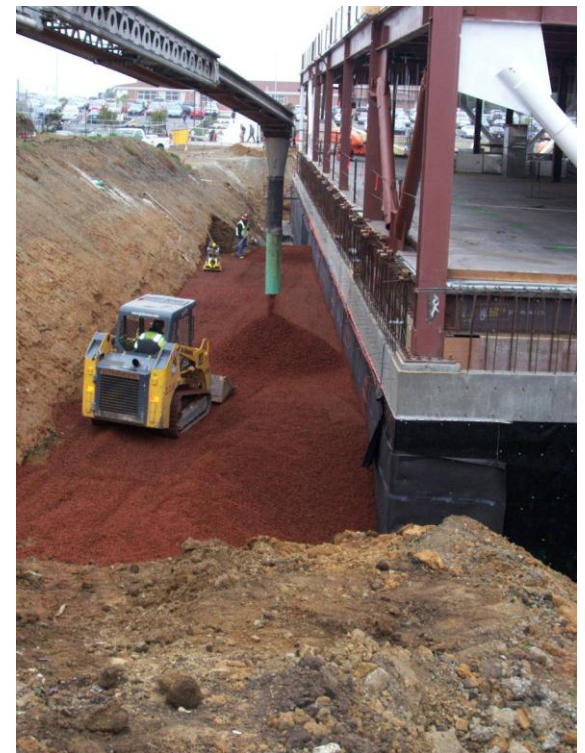
- Pre-Construction
  - **Surplus/Salvage Process**
  - **Recycling**
  - **Hazmat Removal**
  - **Rodent Control**
- Pre-Turnover
  - **Systems Commissioning**
  - **IEQ Testing**
  - **FF&E**
  - **IT**
  - **Specialty Equipment**



# Capital Construction Considerations

## College Decision Making Process

- Fixed Schedule
- Shared Governance
- Sense of Urgency or Lack thereof
- Program Changes
- Indecision
- Budget for the Known and Unknown
  - **Unforeseen Conditions**
  - **New Administration/Faculty**
  - **New Programs**



# New Technologies and Hidden Impact

Go into it with eyes wide open

- Digital Systems
  - **Building Management Systems**
  - **Access Controls/Video Monitoring Systems (ACAMS)**
  - **Fire Alarm System**
  - **Work Order Management System**
- Maintenance Agreement and Warranties
- Co-Generation
- Evaporative Cooling
- Sustainable Products
- Resilient Flooring
- Furniture, Fixtures & Equipment Warranties/Life Cycle
- Computer / Projector / Printer Life Cycle (3 years)
- Staffing
  - **Shortage**
  - **Training of New Systems and Technologies**
  - **Engineer Vs. Technician**

# Project Pitfalls

## Perfection is the Enemy of Progress

- Its not all in the Contract (Black & White or Grey)
- Lack of Empowerment - Micromanagement
- Delegation Error
- Micro vs. Macro (Don't Fixate on Irrelevant Details)
- Over Analytics Resulting in Analysis Paralysis
- Standard Operating Procedures vs. Flexibility
- Project Management vs. People Management



# Keys to Success

“The wisest mind has something yet to learn.”

- Leadership – Don't be Afraid to Delegate
- Communication Protocols – Can't Communicate Enough
- Motivation – Take Charge
- Knowledge – Share the Wealth
- Be Cognizant of Campus Growth or Decline
- Beware of Slick Presentations
- Beware of Quick Pay Back Schemes
- Be Clear & Articulate
  - **Project Goals**
  - **Program**
  - **Design Parameters**
  - **Campus Standards**
  - **Specifications**
- Difficult Choices (Not Enough Funding)
- Managing Expectations (Can't Get It All)
- Don't be Stopped by Analysis Paralysis. Get it Done!

# Question & Answer

[www.smccd.edu/facilities](http://www.smccd.edu/facilities)

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