

Design Build Institute of America (DBIA)

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“DESIGN BUILD LESSONS LEARNED”

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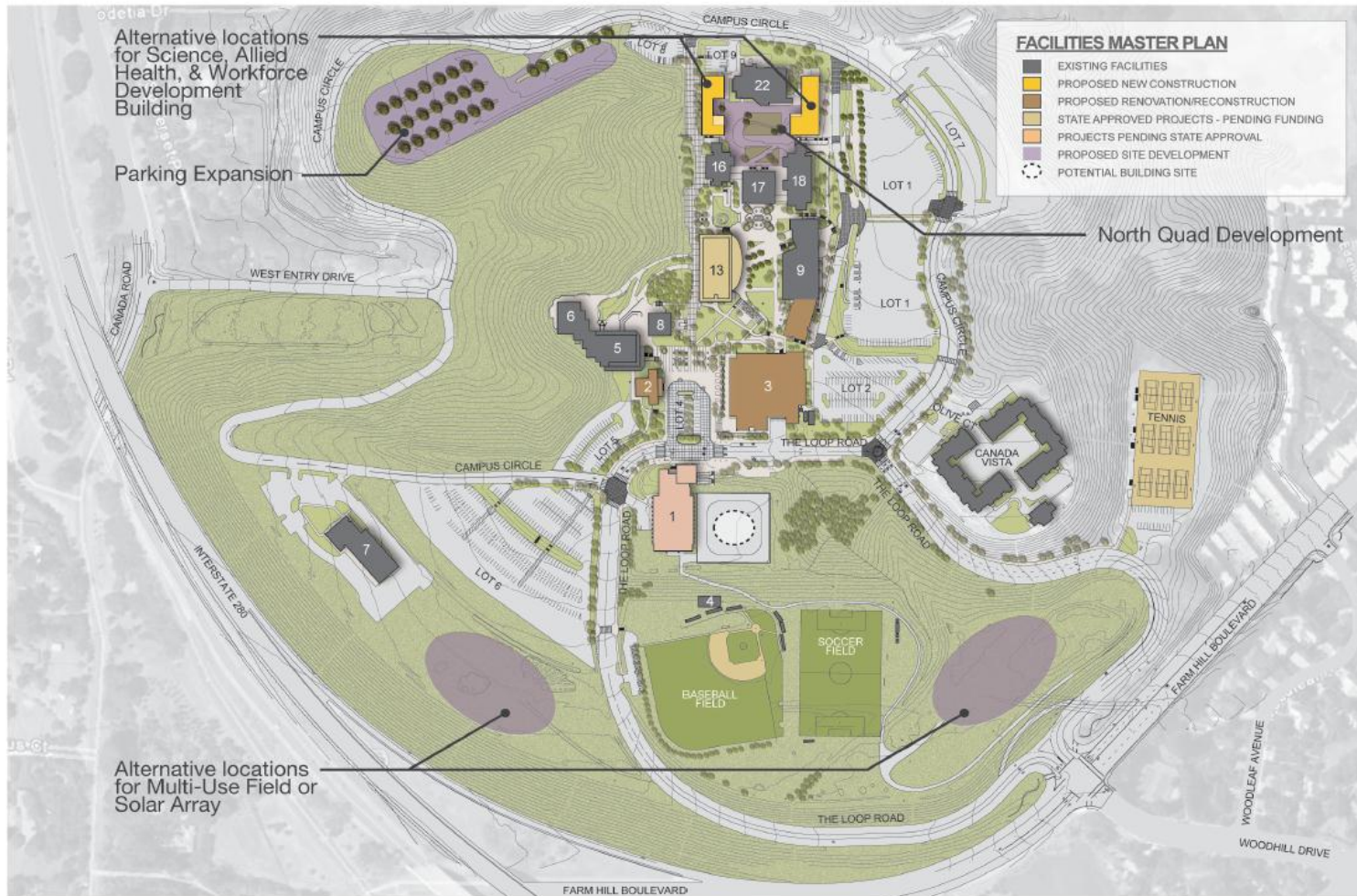
San Mateo County Community College District

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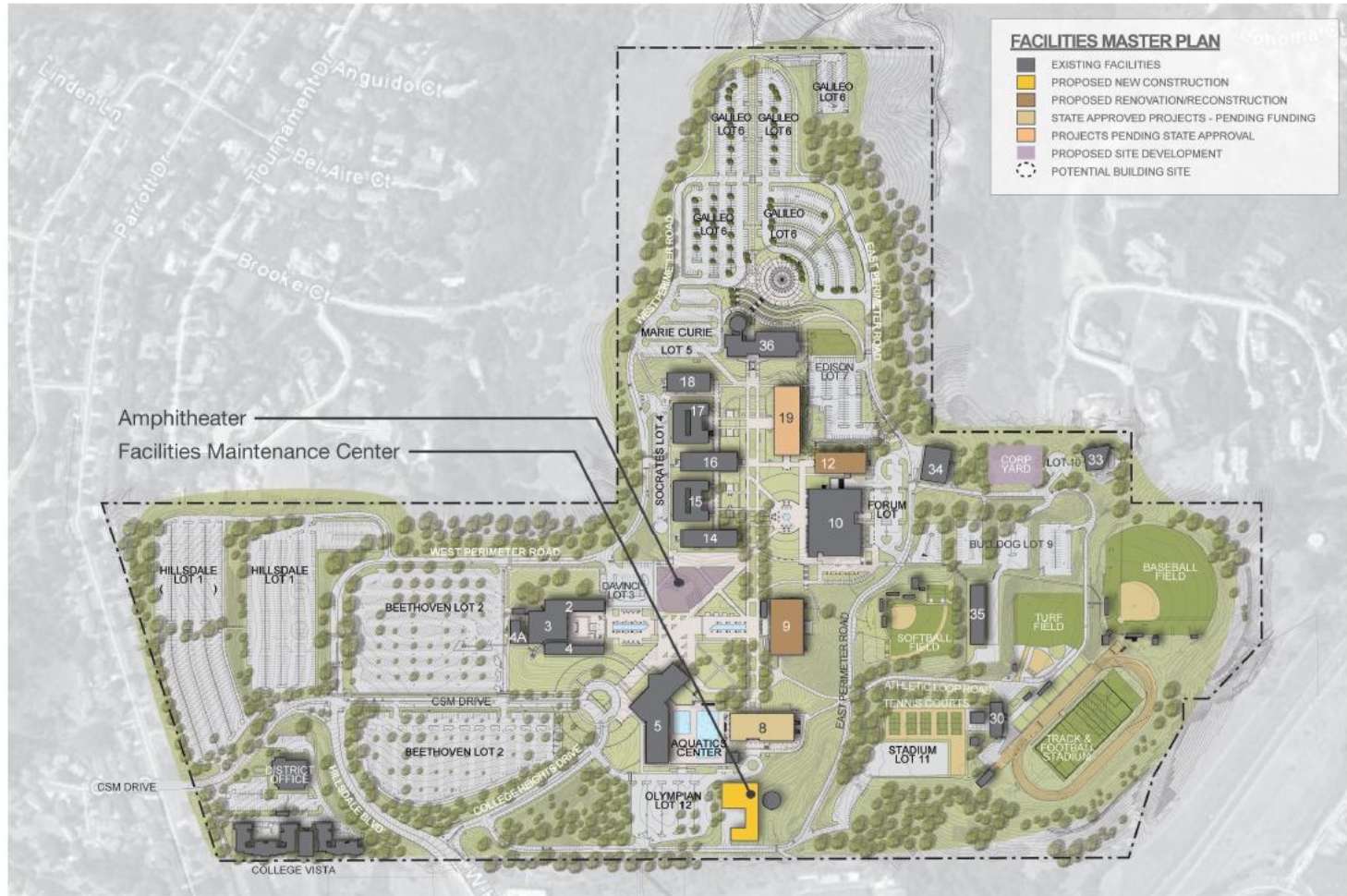
- **Three Campuses (1.4M GSF / 346 Acres)**
 - Cañada College – Redwood City - 1968
 - Skyline College – San Bruno - 1969
 - College of San Mateo – San Mateo – 1963
 - District Office – San Mateo - 1978
- **25,000 Students / 1,000 Staff / Adjuncts**
- **\$900M Capital Improvement Program**
 - Multiple Funding Sources
 - Multiple Delivery Methods

Cañada College Facilities Master Plan 2011

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College of San Mateo Facilities Master Plan 2011



Skyline College Facilities Master Plan 2011

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SMCCCD's Experience with Design Build: New/Modernization

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- CAN Vista 60-unit Faculty & Staff Housing -\$13M
- CAN Gateways - \$7.6
- CSM College Heights 44-unit Faculty & Staff Housing - \$8M
- CSM CIP 2 (\$172.5)
 - CSM 5, Health & Wellness Building - \$41M
 - CSM 10, College Center - \$60.5M
 - CSM Site Work / Electrical Infrastructure/Chiller/Parking - \$71M
- CSM 9,15,17 & 34, Hillsdale Parking (Hike Project) - \$10M
- CSM 36, Science Building with Planetarium & Observatory - \$19.5M
- SKY CIP 2 (\$57M)
 - SKY 4, Cosmetology, Administration & Wellness Center - \$33M
 - SKY 11, Automotive Transmission Lab Building - \$6M
 - SKY Site Work / Electrical Infrastructure/Parking - \$18M
- SKY 6, Student & Community Center & SKY 7, Science Building - \$21.5M
- DW Athletic Fields - \$18M
- DW Energy Efficiency -\$18M

Why Design Build?

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- **To Owner**
 - Faster to market
 - Increased value
 - Know what they are getting for available dollars
- **To Builder**
 - Early involvement to allow for design and budget input
 - Early project planning to encourage creative solutions
 - Subjective contract award – lowest final cost objective
- **To Architect**
 - People we like working with – mutual relationship
 - Opportunity to learn with builder
 - Design experience vs. project type deep experience
 - Beneficial economics (if you're good at it)

Why Design Build?

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- One team with common goals
- Single Responsibility
 - No finger pointing
 - Eliminates legal triangle
- Continuity of team across entire project
- Increased collaboration
- Active client participation
- Enhanced open and honest communication
- Increased value

Why Design Build?

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- **Cost Control – Stipulated Sum**

- Fixed limit of construction costs
- Feedback for better design and construction documents

- **Better Technology**

- Learn from the people who make and install building systems
- Designer participation in practical application
- Flexibility to get the most current technology
- Perfect Design Build Team
 - ✦ Knows design
 - ✦ Knows the builder

- **Project Specific**

- What one persons knows is available to all
- Contractor isn't plotting for claims and change orders
- Communications, documentation & costs are transparent

- **Compressed Schedule: move-in sooner**

- **Satisfying Relationship between Owner / Architect / Builder**

- **Unforeseen Conditions in Renovations: Flexibility & Quick Response**

- **Price Certainty**

District Guidelines / Process

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- **The Design Build Road Map**
 - Selecting a Project for Design Build Delivery
 - BOT Resolution
 - CCCO Project Approval / Notification Process
 - Bridging
 - Public Notification
 - Prequalification
 - Request for Qualification (RFQ)
 - Request for Proposal (RFP) – Stipulated Sum Best Value
 - ✦ Confidential Meetings (x3)
 - ✦ Site Surveys
 - RFP Interviews
 - Selection
 - Stipend
 - Award

Lessons Learned: Prequalification

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- **Who**

- General Contractor
- Architect(s) of Record
- Principal Engineer(s)
- Major Design Build Subcontractors

- **Criteria**

- Construction Experience
- Contractor's License
- Work History
- Litigation and Arbitration History
- Disqualification from Previous Projects
- Compliance with Statutory Requirements and Safety
- Prevailing Wage Requirements
- Project Personnel
- Insurance Requirements
- Bonding Information
- Financial Information

Lessons Learned: Bridging Process

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- Budget should be understood by ALL
- Bridging Architect
 - Educational Master Plan*
 - Facilities Master Plan
 - Owner
 - User Group
- Decision Making (Deliberate & Collegial)
 - Owner
 - End User
 - Contractor
- How Detailed?
 - Concept vs. SD's vs. DD's
- Confidential Meetings (x3)

Lessons Learned: RFP Evaluation

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- Assemble Review Team
 - Administrators / Faculty / M&O / CM Firm
- Allow Sufficient Review Time
- Clearly Identify Evaluation Criteria
- Develop Scoring Matrix (Keep It Simple)
 - Price (Stipulated Sum)
 - ✦ Alternates
 - ✦ Exceptions
 - Technical Expertise
 - Life Cycle Costs
 - Skilled Labor Force
 - Acceptable Safety Record
 - Architectural Aesthetics and Design Innovation
 - Project Management Plan
 - Program Requirements
 - Logistics (Occupied Campus)

Proposal Evaluation Criteria

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FACTORS	Maximum Points
1. Price and Cost Management Plan*	20
2. Technical Expertise	10
3. Life Cycle Costs over 25 Years	10
4. Skilled Labor Force Availability	10
5. Acceptable Safety Record*	10
6. Design Management Plan	10
7. Construction Management Plan	10
8. Schedule	10
9. Legal and Other Program Requirements	5
10. Risk Management Plan	5
TOTAL (Maximum)	100 points

Lessons Learned: College

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- Program changes
- Fixed schedule
- Campus decision – making
- Budget for know and unknown
- Unforeseen conditions
- Coordinate FF&E with DBE
- Accelerated occupancy
- Plan view vs. reality

Lessons Learned: Design Standards / Documentation

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- **Design Standards**

- Communications
- Materials
- Fixtures
- Hardware
- Color Palette
- Plant Species
- BMS Controls –
- Flooring, Etc.

- **LEED**

- **Commissioning**

- Design
- Construction
- Post Occupancy – 12 Mos.

- **Documentation**

- Design Build Contract
- Division OO & O1
- Outline Specifications
- Room Data Sheets
- Meeting Notes
 - ✦ Distribution

- **CM Software – “IMPACT”**

- RFIs
- Submittals
- Meeting Notes
- Change Orders

Lessons Learned: Schedule

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- **Ambitious vs. Conservative**
 - Fast-Track
 - Normal Schedule
- **Academic Calendar**
 - Start of Classes
 - Spring Break
 - Finals
 - Commencement
 - Special Events
- **Owner / End User Wild Card**
 - Added Scope
- **Owner Requirements Pre-Turnover**
 - Surplus/Salvage Process
 - Hazmat Removal
 - Infrastructure As-Builts
 - ✦ Not Reliable
 - ✦ Physical Inspection
 - ✦ X-Ray

Lessons Learned: DBE & DSA

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- **DSA Buy-In Approach**
 - Include District (Owner) participation
 - Establish a contact person at DSA
 - Schedule early and appropriate meetings
 - Establish firm agreed upon DSA submittal dates
 - Document meetings and agreed upon discussions with attendees
 - Describe incremental or phase submittals & deliverables & obtain buy-in
 - Involve structural engineer and other key consultants
 - Follow requested procedure and information for submittals
 - Clearly identify documents requiring approval
 - Provide sufficient reference CDs for reviewer information

Lessons Learned: Partnering Session

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- **Who**

- Owner / Key End Users
- Contractor
- Designers
- IOR

- **What**

- Understand Each Other's Interest
- Agreed upon Rules of Engagement
 - ✦ Establish Chain of Command
 - ✦ Establish Forms of Communication
 - ✦ Establish Decision & Approval Process

Lessons Learned: Influence

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- **District Able to Influence**
 - Design Builder Relationship
 - Alignment of Scope with Stipulated Sum
 - Initial Schedule
 - Effective Qualification Process
 - Extent & Depth of Control – Bridging Documents
- **District Challenged to Influence & Control**
 - Dynamics of DSA Process
 - Construction Schedule
 - Changing Market Conditions
 - Constituents
 - Owner / End User Scope Creep
- **No Influence**
 - Weather
 - Materials Cost

Lessons Learned: Architect

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- A complete set of bridging documents is important for establishing scope, budget and limit of work
- More disclosure of project costs throughout the process is helpful to ensure best value
- Additive alternates should be developed early on in the design process and documented to address potential escalation and de-escalation issues
- Consistency in partnering agreements throughout the process
- Clear, consistent direction from the client regarding programming and committee input

General Contractor Lessons Learned: Owner Clients Obligation & Behavior

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- **Complete performance and quality criteria program**
 - Equal level of detail for all elements of program
 - Define the functional relationships of user groups
 - Define the adjacency relationships of user groups
 - Define materials, systems and quality criteria
 - ✦ **District Standards**

General Contractor Lessons Learned: Owner Clients Obligation & Behavior

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- Perform comprehensive evaluation of existing conditions. Don't use historical data.
 - Soils
 - Civil
 - Infrastructure
 - Hazardous Materials
- Impact of dotted line
 - Project boundaries

General Contractor Lessons Learned: Owner Clients Obligation & Behavior

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- Provide Owner Representative with Responsibility and Authority
 - Negotiate between and manage user groups
 - Differentiate between user wishes and needs.
- Implementation of change after selection
 - Scope change is disruptive to flow of team
 - Just as in Design-Bid-Build, additive and deductive changes will result in DBE administrative and design costs in addition to the hard costs. (DB is not a pass to continuously design and redesign.)

General Contractor Lessons Learned: Owner Clients Obligation & Behavior

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- **Bundle “like projects” into a single program to take advantage of economies of scale**
 - Reduce the waste of multiple teams repeating learning and mistakes
 - Multiple DSA permit applications allow response to college planning, design processes and construction sequencing
 - Allows flexibility in delivery and leveling of resources to reduce cost and schedule

Lessons Learned: General Contractor

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- Early on, define the end users that will be decision makers
- Do not assume that the other team members know what aspects of the job are most important to your organization
 - Owner/Architect design feature is crown jewel
 - Contractor may see same item as prime opportunity for VE
 - Open and continuous communication
- Engage the team early in the process (owner/end users/designers/builders)
- Collaboration during the entire process sets the tone for the entire project
- Include a section in the RFP that allows the DBE to either add scope or deduct scope to conform to the stipulated sum
- Do not require more RFP deliverables than the owner needs to make a selection
- Set interim design milestones, and track diligently
- Take great care of your owner!

Lessons Learned: General Contractor

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- Designing in BIM on a very aggressive schedule may require a concurrent 2D path for estimating and contracting.
- The DBE Team needs to read and edit specifications carefully before issuing to the owner.
- Ensure adequate time for stakeholder input.
- Conduct preliminary review meetings with the regulatory agencies (DSA, etc.).

Lessons Learned: Not a Panacea

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- Owner Sophistication
- Owner Indecision
- Dynamics of an Occupied Campus
- Construction Schedule Inflexibility
 - Academic Constraints
 - Weather Constraints
- Interpersonal Dynamics
- Market Conditions

Summary

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- **Design Build is working**
 - Partner / Team Approach
 - Management of Constituent & DBE Expectations
- **Communicate, Communicate, Communicate**
 - Owner / End User
 - Contractor
 - Designer
 - IOR
 - Permitting Agencies

Future Projects 2012-2013

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- **CAN 1 Fitness Center & Aquatics - \$30M**
 - Demolition & New Construction
- **CSM 8 Fitness Center - \$25M**
 - Demolition & New Construction
- **DW Athletics Field Replacement - \$6M**

Question & Answer

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