

2003 C.A.S.H. Workshop – Reuse of Plans

December 9th, 2003



A CASE STUDY – Witter Ranch Elementary School

Natomas Unified School District

DISTRICT CHALLENGES – PAST PROJECTS

- Enrollment Growth – 850 Students per Year
(a new school each year till 2016)
- Prior Projects Exceeded State 50/50 Budgets
(straining revenue sources & general fund)
- Traditional School Delivery Process not Fast Enough
(falling behind growth)
- Each New School – “Reinvented the Wheel”
(a resource & time consuming process)
- Lack of Facilities Equity Between Sites
(no standardization of programs, amenities, or quality Level)



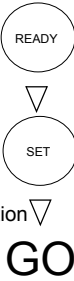
DISTRICT GOALS – REUSE OF PLANS

- Meet SB50 Funding Model – For Elementary Schools
- Streamline Programming & Design Process
- Develop District Standards and Specifications
(applicable for future projects)
- Flexible Reuse Plan Concept Desired
(ease of modification to meet district program objectives)
- Minimization of Change Orders



DISTRICT PROCESS – REUSE OF PLANS

- Define Construction Delivery Method Process
- Establish Project Schedule – *Target Opening Date*
- Identify District Design Committee Members
(commitment to participation is essential)
- Determine Internal Approval Process Required
(architects can move faster than decisions)
- Complete Required Site Approvals and Documentation
- Develop Targeted RFP – *Prototype Concept*
(firms to submit sample reuse plans)
- Interview and Select Best Concept
(adaptability, cost history, speed, client involvement)



LPA GOALS - REUSE OF PLANS

- Building Schools – *Faster and More Cost Effectively*
- Early Confirmation – *Program and Costs*
- Client Involved – *Participatory Design Committee Process*
- Flexibility – *Educational Program Needs and Esthetics*
- Custom Designed Appearance – *Community Compatibility*
(not a cookie-cutter approach)
- Results – *12 Districts, 23 Projects, 9 Built, 7 Construction*



LPA PROCESS - REUSE OF PLANS

- Step 1. Select Appropriate Building Elements
- Step 2. Modify Designs to Facilitate Educational Program Requirements
- Step 3. Configure Buildings On-site to Conform with Constraints and Opportunities
- Step 4. Develop Exterior Imagery Compatible with Community Context



LPA RESULTS - REUSE OF PLANS

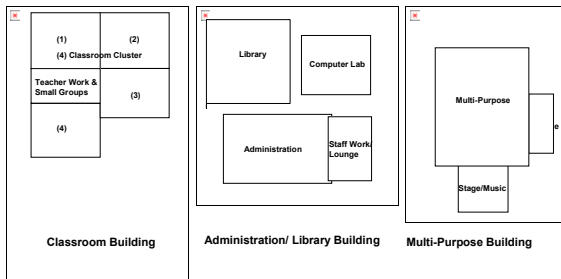


- Building Plans are 90% Efficient (*net assignable versus gross square footage*)
- Timelines Reduced to as Little as 14 Months (*design through occupancy*)
- Project Costs for Elementary and Middle Schools at or Below State Grant Budgets
- Building Systems Became Planning Modules not Floor Plans – *Maximum Flexibility*
- Standardized Reuse of Construction Tested Architectural Details – *Minimized Change Orders*

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LPA Reuse Process – Witter Ranch Elementary School

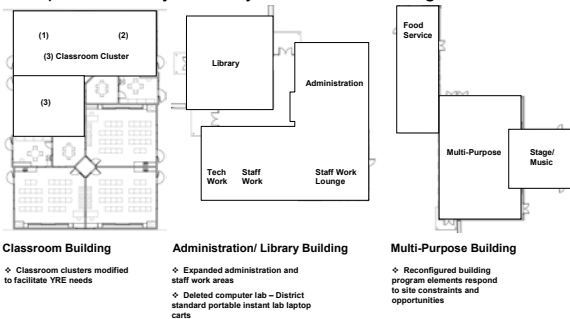
Step 1. Select Appropriate Building Elements



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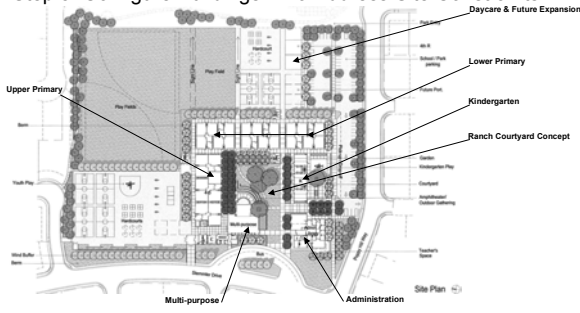
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Step 2. Flexibility – Modify Plans to Meet Program Needs



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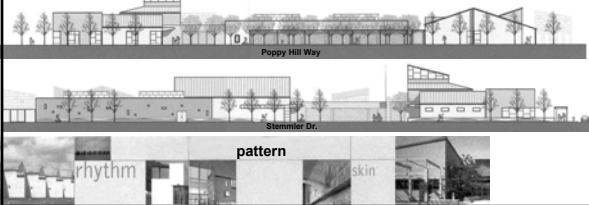
Step 3. Configure Buildings – To Address Site Constraints



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Step 4. Architectural Concept – Community Compatibility

“Agrarian Imagery”



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 LPA Reuse Process – Witter Ranch Elementary School

Lessons Learned

General Design Impacts

- Building orientation can effect the success or failure of the day lighting concept implementation.
- New building solar orientation and resulting plans also have the potential to negatively impact the utilization of technology.
- Neuse concept must be able to accommodate differences in project site size and configuration, drop-off access for buses, vehicles, and pedestrians, and utility infrastructure between sites.
- Amount of modification to the plans can impact the speed of the approval process through DSA and other State agencies. Schedule savings originally anticipated may not be fully realized.
- Budget, schedule, agency approval, and cost changes to the projects original proposal resulting from design modifications to reuse plans should be reviewed in a timely manner with the District to avoid the raising of unrealistic expectations.

Electrical Design Impacts

- Lighting design and electrical loads may be effected by a change in the orientation of the buildings.
- The size of the electrical service available from the local utility agencies effects the electrical design. Point of connection can dramatically increase costs if may service room is not relocated.

Civil Engineering Impacts

- On-site and off-site design will be different with each project. This could result in a high potential for change orders from an accelerated delivery schedule.
- Building configuration, street access, parking, and playfield design will change.
- Soil conditions require a recalculation of the soils under tables and may lead to the redesign and recalculation of structural elements.
- Drainage conditions may require additional filtration or retention. This may require additional site acreage. The new storm water retention regulations effect all projects after the end of next year and require significantly more on site retention and filtration.
- Site topography can potentially negatively impact the budget and AIA/ADA approvals.

Community/ Neighborhood Impacts

- Community participation in the design process and desire for unique or relevant exterior elevations, roof materials, and/or finishes, can result in the potential for major redesign and detailing if not properly managed.

Mechanical Design Impacts

- All heat load calculations will need to be recalculated based upon building solar orientation.
- Changes in the P.O.C.'s for all utilities could impact the building design.
- Available capacity of storm drainage and/or sanitary sewers could effect the pipe size within the buildings.
- Implementation of district standards for equipment and lighting could impact ceiling duct space clearances, and the project structural design.
- Geographic location and climatic conditions may effect the quantity, size, and weight of the mechanical equipment units.

