

REPORT OF THE EXECUTIVE OFFICER  
State Allocation Board Meeting, September 27, 2006

DIVISION OF THE STATE ARCHITECT PLAN APPROVAL REPORT  
(COMPLETE PLANS, EFFICIENT PLAN DESIGN, INSPECTIONS)

PURPOSE OF REPORT

To present a report prepared by the Division of the State Architect (DSA) addressing the plan approval process.

DESCRIPTION

At the May 2005 State Allocation Board meeting, in its consideration of a report by the Los Angeles Unified School District, the Board requested that the DSA report back at a future SAB meeting with information on what constitutes a complete set of plans for review, to include suggestions for efficient plan design to reduce the cost of school construction, and considerations for the DSA to allow local building departments to conduct some of the inspections.

To comply with the Board's request, the DSA has provided the attached report and Project Submittal Checklist.

RECOMMENDATION

Accept this report.

This Item was approved by the State Allocation Board on September 27, 2006.

**DEPARTMENT OF GENERAL SERVICES  
DIVISION OF THE STATE ARCHITECT (DSA)**

**EFFICIENT AND COST-EFFECTIVE  
SCHOOL DESIGN AND CONSTRUCTION  
IN CALIFORNIA**

**REPORT OF FINDINGS**

**SEPTEMBER 2006**

**PREPARED FOR:**

The State Allocation Board

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Department of General Services

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# INTRODUCTION

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**Objective** In May 2005, the State Allocation Board requested that the Division of the State Architect (DSA) study reforms for improving the school design and construction process in California. In summary, the Board members requested that suggestions be gathered for ensuring that a viable design, plan, and review process is in place so that the schools are designed and built in an efficient and cost-effective manner that serves the best interests of the State of California.

In response to the request, the DSA conducted an extensive search of existing literature in this area. Additionally, the DSA, in response to recommendations to improve the plan review and approval process resulting from a task force sponsored by the California Community Colleges and the Division of the State Architect, has developed the Collaborative Process for Project Development and Review and the DSA Academy.

This report, dated September 2006, reflects a:

- Summary of key findings from relevant and noteworthy existing literature on the topic of school design and school construction costs
- Overview of DSA initiatives—the Collaborative Process for Project Development and the DSA Academy—currently underway and that are intended to improve the current school design and plan review processes
- Comprehensive bibliography of reports and studies conducted by various parties nationwide on school capital outlay programs and practices

# SUMMARY OF KEY FINDINGS

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## Introduction

This section summarizes key findings collected from relevant existing literature on the topic of school design and plan review processes. The three studies summarized in this report are especially noteworthy and include:

- To Build a Better School, Little Hoover Commission
- Public School Cost Reduction Guidelines, Office of Public School Construction/Vanir Construction Management, Inc.
- Best Practices Report, Office of Public School Construction

These studies involved extensive and wide-ranging stakeholder participation from those familiar with all aspects of public school construction.

Stakeholders included school districts, County Superintendents of Schools, architects, engineers, contractors, consultants, manufacturers, builders, inspectors, state agencies, legal professionals and other interested parties.

Additional studies, reports, and articles are references in the extensive bibliography included in this report.

In summary, the topic of school design and construction has been studied extensively. A key theme repeated throughout these studies is the importance of utilizing sound and proven management systems and practices in order to constructively impact the efficiency and cost-effectiveness of public school design and construction in California.

## Findings

In 2000, the Little Hoover Commission conducted a study, To Build a Better School. In summary, the Commission's overall recommendation was to "encourage policy-makers and local educators to create a process and a venue for designing, building and maintaining quality schools, and for training the staff needed to replicate that quality in hundreds of school districts throughout California."<sup>1</sup> The Commission's findings also stated that to ensure that public funds are used wisely, the exploration of alternatives to the current system should be explored, including:

- "In some communities, school districts may not be the best organization to build and maintain school buildings."<sup>2</sup>
- "The success of the State's school facility program rests on the ability of school districts to manage construction programs, but the degree of competence varies greatly among districts."<sup>3</sup>
- "The State's multiple interests in safe and efficient school facilities are not optimally served by a divided oversight structure."<sup>4</sup>

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<sup>1</sup> Little Hoover Commission, To Build a Better School, February 2000

<sup>2</sup> Little Hoover Commission, ii

<sup>3</sup> Little Hoover Commission, iii

<sup>4</sup> Little Hoover Commission, iv

## SUMMARY OF KEY FINDINGS

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### Findings

(continued)

- “While the State has taken steps to hold down construction costs, it has no mechanisms or incentives to encourage and assist local school districts to design, build, operate, maintain and renovate buildings to maximize value over the life of the facilities.”<sup>5</sup>
- “While the State is an equal partner in developing school facilities, it does not have an inventory of buildings, a methodical way to project and plan for future needs or to assess progress toward meeting those needs.”<sup>6</sup>
- “While voters have supported statewide bond efforts, local school districts do not as a whole have reliable and efficient mechanisms for financing facility needs.”<sup>7</sup>

In April 2000 and as a requirement of SB 50 (1998), the Office of Public School Construction (OPSC) published its Public School Cost Reduction Guidelines. The purpose of the guidelines was to set forth “measurable reductions in the cost of construction of public school facilities”<sup>8</sup>. The study identified key issues and processes that inflate the cost of construction and suggestions for avoiding them. According to OPSC’s study, “the major factors effecting the costs of public schools in California are driven by several overriding issues:

- The desire for school-by-school control and the resultant customizing of each school to meet what is perceived as local education necessities, has caused a “one of a kind, ‘start-over-every-time’ approach
- Notwithstanding the large statewide volume of school construction, most districts are faced with infrequent needs, and often limited resources and capabilities for managing construction
- The State’s mandates for the K-12 system are more complex than those for other state capital outlay systems, and are driving the results and the costs
- The traditional project delivery methods, from initial planning through design and construction, are linear, step-by-step, prescriptive methods that fail to take advantage of current and evolving performance”<sup>9</sup>

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<sup>5</sup> Little Hoover Commission, v

Little Hoover Commission, To Build a Better School, February 2000, vi

<sup>7</sup> Little Hoover Commission, vii

<sup>8</sup> Office of Public School Construction/Vanir Construction Management, Inc., Public School Construction Cost Reduction Guidelines, April 2000, v

<sup>9</sup> Office of Public School Construction, v

## SUMMARY OF KEY FINDINGS

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### Findings

(continued)

The study proceeded to suggest numerous approaches to reducing costs in the following ten subject areas:

1. “District Responsibilities—a) Know what you don’t know; recognize your limitations and ask for help where you need it; b) The design and construction process is collaborative and complex; it needs clear and unwavering direction; c) There are no quick fixes; if you have an immediate need, hire the very best expertise available”<sup>10</sup>
2. “Joint Use Facilities—a) The District must actively pursue the opportunities; b) The benefits must accrue to all parties to the Joint Use; c) The costs to the District must be less than building the facility on its own”<sup>11</sup>
3. “Site Issues—a) Select the site carefully, considering both the educational criteria and the design and construction impact; b) Become fully involved in local land planning issues that will effect the demographics; the availability, and the value of District’s current and future property; involve the community in the selection; c) Plan ahead; undertake and update long range Facilities Master Plans”<sup>12</sup>
4. “Professional Consultants—a) Establish a clear definition of the scope of services required thus avoiding duplication or overlap of services, including the time restraint for providing the services, and the fee anticipated for the services; b) Use the fewest, but most expert consultants possible through careful selection; c) Manage their services through constant, prompt and thorough interaction”<sup>13</sup>
5. “Contractors—a) Utilize a thorough pre-qualification system that will solicit the most qualified contractors for the project; b) Manage the construction phase through constant interaction and open communication; c) Manage the Change Orders and Dispute Resolutions assertively and in a timely manner”<sup>14</sup>
6. “Agencies—a) Know what you don’t know; Recognize your limitations and ask for help where you need it; b) Become fully involved in both local and state agency issues; c) Work with the agency staffs, not against them”<sup>15</sup>

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<sup>10</sup> Office of Public School Construction/Vanir Construction Management, Inc., Public School Construction Cost Reduction Guidelines, April 2000, 7

<sup>11</sup> Office of Public School Construction, 7

<sup>12</sup> Office of Public School Construction, 25

<sup>13</sup> Office of Public School Construction, 35

<sup>14</sup> Office of Public School Construction, 45

<sup>15</sup> Office of Public School Construction, 53

## SUMMARY OF KEY FINDINGS

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### Findings (continued)

7. “Types of Construction—a) Keep the design as simple as possible; good architecture and good educational environments do not need overstatements of configuration, materials or finishes; b) Utilize standard elements, that work well, are readily available, and tested over time; c) Maximize the use of factory-built components, wherever they best suit the design”<sup>16</sup>
8. “Prototypes—a) Expend the time and resources necessary to fully research the best educational components from colleague districts so that the prototype design represents the very best thinking and experience; b) Design the prototype as a complement of basic educational components to ensure maximum flexibility for future uses and educational changes; c) Keep the basic components as simple as possible, but include the ability to tailor the exterior visual character to the local community”<sup>17</sup>
9. “Project Delivery—a) Regardless of the project delivery method used, the qualifications, capability, and commitment of the entities involved will dictate the success of the project; b) The individual, professional, responsibility of each entity involved remains the same. The District, the design consultant, the general contractor, and each subcontractor is equally responsible for their portion of the work regardless of the type of project delivery; c) There is no one best method, all should be considered”<sup>18</sup>
10. “Project Budgeting—In order to effectively utilize capital outlay resources, districts need to budget more accurately and completely. This includes both long range fiscal planning and short range project planning”<sup>19</sup>

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<sup>16</sup> Office of Public School Construction/Vanir Construction Management, Inc., Public School Construction Cost Reduction Guidelines, April 2000, 61

<sup>17</sup> Office of Public School Construction, 77

<sup>18</sup> Office of Public School Construction, 85

<sup>19</sup> Office of Public School Construction, 104

## SUMMARY OF KEY FINDINGS

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### **Findings** (continued)

Additionally, at the request of the State Allocation Board, the OPSC published a Best Practices Report in March 2003 “regarding a variety of methods and best practices of school facility construction.”<sup>20</sup> In response to the Board’s request, the OPSC compiled a sampling of resources that address various strategies and best practices for school facility construction.

Contained within this Best Practices Report is feedback from districts that built schools with funding from the Proposition 1A State Bond funds as well as information on topics such as cost reduction, energy conservation, sustainable schools, reuse of plans, prototype plans, urban design solutions, design or developer built schools, School Facility Program eligibility and funding and other helpful tips for successful projects. This report also contains “Feature Projects” from the OPSC Breaking Ground newsletter that illustrates the latest school facility planning ideas and design solutions approved by DSA and the California Department of Education.

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<sup>20</sup> Office of Public School Construction, Best Practices Report, March 2003

# OVERVIEW OF DSA INITIATIVES

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## **Introduction**

Numerous efforts to improve school design and conserve fiscal resources in the design and construction of schools have been well-documented over the years. Since the 1930s, governments, educators and economists have been studying the state's infrastructure including its schools. Local and state agencies continually perform studies and reviews on school capital outlay policies, procedures, practices, delivery methods and services in an effort to simplify and improve processes, and conserve resources while providing enhanced service to Californians.

This overview provides a report on the DSA initiatives—the Collaborative Process for Project Development, and the DSA Academy—that are intended to improve the current school design and plan review processes.

## **Collaborative Process for Project Development and Review**

The “Collaborative Process for Project Development and Review” is currently under development by DSA to ensure the public safety of K-12 schools and community college facilities through a collaborative, consistent, and timely project development, review and approval process.

Pending approval of AB 162 (Leslie) during the 2005-06 legislative session, the collaborative process will provide DSA clients with an alternative process to the traditional procedure for obtaining the State Architect's approval of school construction plans and specifications. Participation in this alternative “Collaborative Process for Project Development and Review” is entirely voluntary on the part of all parties—the Division of the State Architect (DSA), the district, and its design professional.

This process will result in the early involvement of DSA in collaboration with the district and its design professional beginning during the development of the project's preliminary design. The process includes the mutual agreement of DSA, and the district and its design professional on their respective responsibilities, including commitment to design decisions and schedules for the project's development and review. Also involved is the early identification of technical issues by DSA and the resolution of technical issues by the district and its design professional prior to DSA project submittal. Access to “qualified DSA external plan review firms”<sup>21</sup> for consultation earlier on technical project issues will also be available.

It is anticipated that this process, planned for implementation in 2007, will reduce costly redesign requirements to final project plans and specifications and improve the timeframes associated with completion of a project's development and review process.

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<sup>21</sup> “Qualified DSA external plan review firm”—an individual, firm, or the building official of a city, a county, or a city and county, as defined in Section 18949.27 of the Health and Safety Code

## OVERVIEW OF DSA INITIATIVES

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### **DSA Academy**

The DSA Academy has been recently established by DSA. When fully implemented, the Academy will serve as a major learning resource for those involved in the school or community college planning, design and construction process.

Classes offered by the Academy seek to promote consistent knowledge and application of the building codes and regulations needed for successful plan review, approval, and construction of public buildings under the jurisdiction of DSA.

To date, courses in the following subject-matter areas have been developed and delivered:

Project Inspector – Overview

Plan Review— Access Compliance, Structural Safety, Fire & Life Safety

Expanded classes in all subject-matter area will be phased in after Fall 2006.

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