DOCUMENT RESUME

ED 334 657 EA 023 128

Facilities Planning and Construction: A TITLE

Self-Assessment Guide for School District Fiscal

Policy Teams.

INSTITUTION

California State Dept. of Education, Sacramento.

REPORT NO

ISBN-0-80011-0970-1

PUB DATE

91

NOTE

95p.

AVAILABLE FROM Bureau of Publications, Sales Unit, California

Department of Education, P.O. Box 271, Sacramento, CA

95802-0271 (\$3.50 plus sales tax for California

residents).

PUB TYPE

Guides - Non-Classroom Use (055) -- Tests/Evaluation

Instruments (160)

EDRS PRICE

MFO1 Plus Postage. PC Not Available from EDRS.

DESCRIPTORS

Building Design; Building Innovation; Building Plans;

Construction Programs; *Educational Facilities;

*Educational Facilities Planning; Elementary Secondary Education; Facility Expansion; *Facility

Guidelines; Facility Improvement; Facility Planning; Facility Requirements; *Program Development; Program

Effectiveness; Program Improvement; *Site

Development

ABSTRACT

This self-assessment guide is designed to assist members of fiscal policy teams in assessing current district standards and practices in the area of school facility planning and construction in relation to the total educational program. Arranged to complement the components of a long-range master plan, the guide is divided into nine parts: (1) organization and process for planning a facility; (2) use of demographics in planning; (3) selection and acquisition of the site; (4) determination of the need for educational facilities; (5) program requirements; (6) selection of an architect; (7) financing for the facility; (8) construction of the school building; and (9) orientation and postoccupancy evaluation for users. Each section contains an introductory statement and one or more goals and desired practices that serve as reference points against which current district practices may be assessed. The questions that are included in each section should be answered by each team member individually and then used to stimulate discussion by the group. (EJS)

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A Self-assessment Guide for School District Fiscal Policy Teams

Facilities Planning and Construction



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CALIFORNIA DEPARTMENT OF EDUCATION - SACRAMENTO, 1991

A Self-assessment Guide for School District Fiscal Policy Teams

Facilities Planning and Construction

Prepared under the direction of the

Field Services Branch
California Department of Education





Publishing Information

This publication, which was prepared by the Field Services Branch. California Department of Education, was edited and prepared for photo-offset production by the staff of the Bureau of Publications, working in cooperation with Bill Vasey, Office of School Business Practices. The document was published by the Department, 721 Capitol Mall, Sacramento, California (mailing address: P.O. Box 944272, Sacramento, CA 94244-2720). It was distributed under the provisions of the Library Distribution Act and Government Code Section 11096.

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ISBN 0-8011-0970-1



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Preface

This document, a self-assessment guide for fiscal policy teams, is focused on the fiscal and program elements of school facilities planning and construction. Each of these elements has a direct or indirect impact on the delivery of a quality educational program to the students of the district.

No district can fulfill its educational responsibilities without planning for the future, and no district can plan intelligently for the future without formulating a relationship among its past actions, its present condition, and its perceived future needs. The formulation of this relationship is the process known as long-range planning.

A long-range facility master plan is developed through the integrated efforts of a number of people, including educational facility planners, teachers, administrators, architects, community leaders, and other skilled professionals. Data are collected and analyzed that relate to the existing and desired educational program, the adequacy of existing facilities, current and projected student populations, financial needs and resources, and implementation plans. The results of these analyses lead to specific recommendations that answer such questions as:

- 1. How and by whom will the plan be developed?
- 2. What are the purpose and character of our educational program, and what kind of facility do we need to support that program?
- 3. What is the nature and extent of the projected student population?
- 4. How well do existing facilities meet current and projected needs?

- 5. What will our future facilities needs be?
- 6. What should we do to meet those needs?
- 7. When should we do it?
- 8. How much will it cost?
- 9. How will we pay for it?
- 10. Did our actions bring the desired results? After implementation, how do we evaluate?

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Acknowledgments

The contributions of the persons listed here, representing the California Association of School Business Officials, are deeply appreciated. They gave generously of their time and energy and shared their experiences as they helped to develop this publication.

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Introduction to the Guide

This guide has been prepared to assist members of the school district's governing board, the district superintendent, the district's chief business official, and other members of the fiscal policy team in assessing the current standards and practices of school facilities planning and construction in relation to the total program. The desired practices described in this guide are designed to stimulate discussion among members of the fiscal policy team about the operation of the district's school facilities planning and construction programs, to help the team make improvements in those programs, and to identify appropriate financial support requirements. Team members should realize that progress requires a considerable amount of time and planning.

Background: School Facilities Planning

The "schoolhouse" has evolved from hiter for its occupants to a sophisticated educational tool, capable (ideally) of supporting a wide variety of learning experiences in a safe, comfortable, and technologically enhanced environment. As late as the early part of this century, educators paid little attention to the "things" of education. The teacher and the student were the only elements envisioned. Gradually, over the last several decades, the physical environment came to be recognized as an important element, too. School officials saw the direct relationship between space and function; the facility could hinder or enhance the educational program. In spite of this awareness, planning for schools all too often has a low priority among school districts' officials until they suddenly realize that a need is imminent. At that point, an air of urgency accompanies the p'anning process, resulting in shortcuts, limited involvement in desirable consultations, and eventual acceptance of an end-product that is less effective than it could have been.

If Winston Churchill's statement is true that "We shape our buildings, and thereafter they shape us," serious attention should be given to the planning and design of schools. Good planning is a deliberative process that for maximum effectiveness, both financially and programmatically, belongs in the mainstream of the educational endeavor rather than occupying a sidetrack where it is pulled out for special treatment only in crises. This self-assessment guide may provide the impetus for an integrated and ongoing planning process that culminates in more educationally appropriate facilities that are constructed in a more timely and effective manner.

Fiscal Policy Team

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The fiscal policy team is a unique concept, first developed in California, that provides a process and structure for the review, evaluation, and improvement of school districts' financial management and business practices. The fiscal policy team concept is



based on the belief that improved decision making takes place when the decision makers are knowledgeable, interested, and committed to the team approach. The composition of the fiscal policy team is not rigid and should be adapted to meet local needs. When the team discusses a given fiscal or management topic, the individual responsible for that function should become a contributing member of the team.

A fiscal policy team typically is composed of one or more board members; the superintendent; the chief business official; and others, such as the director of facilities planning and director of curriculum, as appropriate. (In small districts the person responsible for facilities planning may be the superintendent, the chief business official, the special projects manager, the director of maintenance and operations, some other staff member, or the architect. In larger districts this responsibility may be assigned to a director of facilities planning.)

The goals of the fiscal policy team are to improve communications between the governing board and the school's administration and to enhance the basic knowledge and understanding of the members of the fiscal policy team.

Roles of Team Members

Members of the team each play significant but different roles in the assessment process. While team members have varying responsibilities according to their positions and bring unique skills and personal interests to the process, it is important that they adopt a perspective of overall district needs while at the same time ensuring that different points of view are fairly represented. The key decision makers and their traditional roles are listed below. In the concept of the fiscal policy team, however, these traditional roles and responsibilities may be merged into a more collegial decision-making process.

The governing board members are responsible for developing policies, establishing the board's goals consistent with the financial condition of the district, and assisting in the determination of the district's priorities.

The superintendent is responsible for implementing board policies, directing management and staff in the assessment of the overall needs of the district, reporting to the board the status of current and proposed laws and regulations that affect the district, and coordinating the planning process of the fiscal policy team.

The chief business official is responsible for providing current and projected financial information for both the school facilities program and the district as a whole.

The director of curriculum and instruction is responsible for the educational program. Since there is such a close relationship between facilities design and the activities that occur in the facilities, the director of curriculum and instruction has an important



role on the fiscal policy team. This person provides educational program information that relates to class size, the number and kinds of courses being taught, and the many special space and equipment needs dictated by instructional methods and related students' activities.

The director of facilities planning and construction (or the person fulfilling this role) is responsible for conducting the overall management of the school district's facilities programs; projecting future needs and recommending alternatives to meet those needs; assessing the educational and physical adequacy of existing facilities; developing, or coordinating the development of, educational specifications for new facilities; conducting demographic studies; selecting, acquiring, and disposing of school sites; recommending candidates during the architect selection process; supervising the architect; hiring and supervising the building inspector; acquiring and installing temporary relocatable facilities (portables); supervising plans for modernization and reconstruction; coordinating the bidding process; supervising new construction; specifying furniture and equipment; developing and administering the capital outlay budget; administering the developer fee program (if any); monitoring legislation and local ordinances; and interacting with the district's maintenance and operations division and with outside agencies.

Suggested Use of the Guide

This guide should be read independently by all members of the fiscal policy team so that they can determine their own familiarity with a district's policies, processes, available data, mandated responsibilities, and with the other requirements that are essential to the planning and construction program. Team members should then come together for a discussion or a series of discussions of each section of this guide.

These discussions will, over time, enable the team to establish a common vocabulary, develop increased knowledge of the district's facilities program, and provide a basis for working together as an effective team. This self-assessment guide is arranged to complement the components of a comprehensive long-range master plan and is divided into the following parts:

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- I. Organization and Process for Planning a Facility
- II. Use of Demographics in Planning
- III. Selection and Acquisition of the Site

- IV. Determination of the Need for Educational Facilities
- V. Program Requirements

- VI. Selection of an Architect
- VII. Financing for the Facility
- VIII. Construction of the School Building
 - IX. Users' Orientation and Post-Occupancy Evaluation



Each section contains an introductory statement, one or more goals for that section, and one or more desired practices that serve as reference points against which current district practices may be assessed. The questions that follow in each section should be used to guide discussion. Each member of the fiscal policy team should respond independently in accordance with his or her best judgment.

On completion of the questions in each section, the team members should compare answers and use the results as a basis for an in-depth discussion. To facilitate resolution of differences and communication among the members, the team should focus on questions to which any member responds negatively.

The discussion is expected to rely heavily on the chief business official and the director of facilities planning and construction, or the person responsible for those functions. These individuals are expected to have reviewed the questions well in advance and to have gathered necessary data and reports for review during the discussion.

The team should complete work on each section before moving on to the next section. The questions are meant to facilitate movement toward improving the operation of the district's school facilities and construction programs. These discussions should result in the decisions that are necessary for the district to achieve its facilities planning and construction goals.



Section I

Organization and Process for Planning a Facility

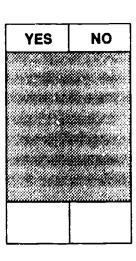
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In exploring the educational benefits of developing a long-range facility master plan (or establishing a facilities planning department for this purpose), the school district's governing board must first decide how and by whom the plan will be developed. The governing board, the superintendent, the chief business official, the director of facilities planning and construction, and the director of curriculum and instruction are the primary planning agents responsible for decision making and the implementation of the plan. Additional first-line planning agents are other district staff and the outside consultants and technical experts who may be employed by the board.

The board sets policy and establishes the framework for planning, and the chief administrator or the designated staff provides leadership during the planning process. It is the school board and/or primary district staff who decide how much decision making is shared with the community at large and the extent to which other individuals are allowed to become accessory planning agents.

GOAL: To establish a policy and a framework for long-range facilities planning

- 1. Desired practice. The governing board should establish a policy that reflects its commitment to an ongoing facilities planning process. This policy should provide a framework for carrying out planning responsibilities. It is recommended that a standing committee be formed that will be devoted exclusively to facilities planning and construction. Suggested representatives on the committee would be board members, community leaders, personnel from central district staff, building principals, teachers, classified personnel, personnel from city and county planning agencies, and representatives of the chamber of commerce and the building industry. The board's charge to this committee should be clearly spelled out.
 - a. Has there been a commitment by the board to the development of a long-range facilities master planning process?





b.	Is there agreement on the time period to be covered by the facilities plan? (five years? ten years?
	15 years?)

- c. Have resources and personnel been allocated for this process?
- d. Has the role of the community at large been determined?
- e. Has a planning committee been established?
- f. Is the planning committee broadly represented?
- g. Has an individual been designated to provide leadership and ensure the committee's progress toward its goals?
- h. Has a mechanism been established to ensure that long-range plans are reviewed on a regular basis?
- 2. Desired practice. It is important that responsibility for facilities planning be assigned to one person. Depending on the size of the district and the extent of its needs, this person may be the director of facilities planning, the superintendent, the chief business official, an outside consultant, or another member of the planning committee. The board should allocate the resources (time and money) to develop and implement the plan.
 - a. Are responsibilities assigned so as to avoid conflicts, enhance decision making, and designate accountability?
 - b. Has one person been given responsibility for the entire facility planning process?
 - c. Has the board assessed the relative merits of in-house versus consultant leadership?
 - d. Does the planning leader, under the supervision of the district superintendent, control (not necessarily perform) the following activities:
 - (1) Selecting the architect and the building inspector?
 - (2) Developing educational specifications in cooperation with the instructional leader?

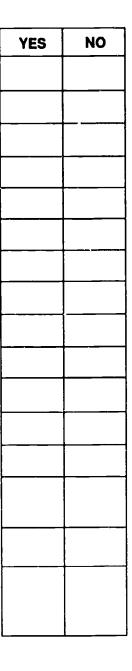
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YES

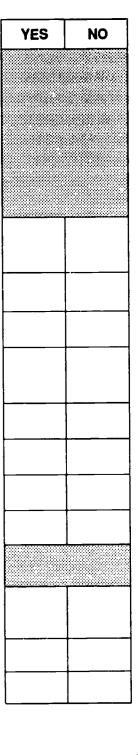
NO



- (3) Preparing enrollment projections?
 (4) Evaluating the adequacy of existing facilities?
 (5) Identifying facility needs?
 (6) Selecting and acquiring sites?
 (7) Developing and administering the capital outlay budget?
 (8) Bidding (in coordination with business services)?
 (9) Overseeing the construction process?
 (10) Modernizing and reconstructing facilities?
 (11) Supervising the architect and the building inspector?
 (12) Performing the orientation and post-occupancy evaluation?
- (13) Justifying the developer fee program?
- (14) Monitoring legislation and local ordinances?
- (15) Interacting with the district's maintenance and operations division?
- (16) Monitoring the processes of the Coalition for Adequate School Housing and the State Allocation Board?
- (17) Interacting with other public agencies?
- e. Is there a budget commitment to adequately fund the staff that will carry out facilities planning activities?



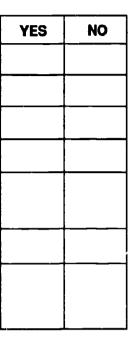
- 3. Desired practice. The planning committee functions as an advisory group and ensures staff and community involvement in the development of the plan. Professional resources should be called on in particular areas of competency. Suggested resources are the School Facilities Planning Division, Department of Education; offices of county superintendents of schools; colleges and universities; private planning consultants; architectural and technical consultants; city and county planners; and councils of government. The decisions of the planning committee should be documented as recommendations and submitted to the governing board for consideration. Since the planning process is ongoing, the planning document should be updated annually.
 - a. Did the governing board's charge to the planning committee clearly state that the committee's role is advisory, not managerial?
 - b. Was the district's curriculum and instructional staff consulted?
 - c. If outside professional resources were used by the committee, were they adequate and appropriate?
 - d. Did the planning committee prepare a written document containing its recommendations and submit the document to the governing board?
 - e. Did the plan include both the ultimate facilities goals and the interim steps to achieve these goals?
 - f. Did the written report include alternative solutions?
 - g. Did the written report include an assessment of the feasibility of each alternative?
 - h. Did the writers of the report recommend a "best" alternative?
 - i. Did the written report include answers to the following questions:
 - (l) What are the purpose and character of our educational program, and what kind of facility do we need to support that program?
 - (2) What will our future facilities needs be?
 - (3) How well do existing facilities meet current and projected needs?





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- (4) What should be done to meet current and future needs?
- (5) When should we do it?
- (6) How much will it cost?
- (7) How will we pay for it?
- (8) After implementation, will there be an evaluation to determine whether our actions brought the desired results?
- j. Diá the report list the assumptions used in answering the questions in the above item?
- k. Is the written report updated annually by the planning committee and delivered to the governing board?





Section II

Use of Demographics in Planning

No master plan is complete without an overall view of the total community that includes population characteristics, density patterns, land use, potential for development, economic conditions, and a host of other factors. The demographic study is that component of the master plan in which the geographical growth potential of the district is analyzed and changes in the student population are projected.

Enrollment projections are the primary anticipated outcome of the demographic study and are indispensable to long-range facilities planning. Projections are a form of probability statement and depend on a series of assumptions related partly to past conditions and partly to anticipated future trends. The most accurate projections are possible when past trends are projected into the future. When there is reason to believe future trends will depart markedly from those of the past, proper analysis and interpretation of all demographic factors are extremely important. The long-range plan should be flexible enough to allow for a certain margin of error since the perfect method of accurately predicting future enrollments has not been invented. It is usually wise to bracket enrollment projections with a high or low estimate rather than providing only one estimate.

Because of its technical complexity, the demographic study should be performed by expert personnel either on staff or from the private sector. Because of a variety of changing conditions and because enrollment projections become less and less accurate as the projection period is extended, projections should not be relied on for specific prediction beyond three to five years. For this reason it is extremely important that projections be updated annually.

GOAL: To provide valid enrollment projections that can form the basis of estimates of future needs for sites and facilities

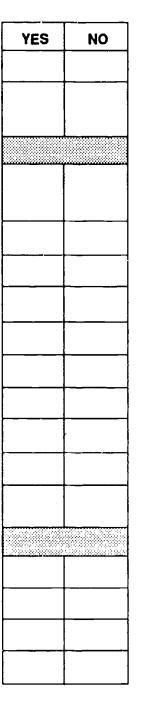
1. Desired practice. A thorough demographic study should be based on factors such as those listed below. Affirmative answers to these questions will help ensure that the district has a valid and useful planning document.



a.	Has a commitment	been made to c	conduct a demogra	phic study?
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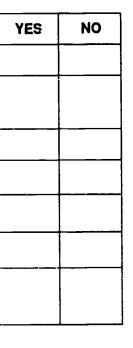
- b. Was the demographic study performed by competent personnel on the district's staff or by outside professionals?
- c. Were enrollment projections based on:
 - (1) Student cohort survival techniques modified by projected housing starts and numbers of students per home?
 - (2) Data on nonpublic schools' enrollment by grade level?
 - (3) Interdistrict transfers?
 - (4) Patterns of pupil dropout/retention/acceleration?
 - (5) Changes in the school district's boundaries?
 - (6) Patterns of migration?
 - (7) Fluctuations in the birth rate?
 - (8) A census of preschool children?
 - (9) City/county general plans?
- d. Were enrollment projections compared for validity with overall community population projections?
- e. Were enrollment projections computed and interpreted based on the following additional factors:
 - (1) Changes in land use (residential, commercial, industrial, urban renewal, and agricultural)?
 - (2) Geographical limitations and developable land?
 - (3) Local ordinances that regulate the rate of growth in the area?
 - (4) Forecasts of economic conditions, as reported by the private sector?

^{*}Cohort survival is a term for an enrollment projection technique that is based on the historical percentage of change in the number of students from one grade to the next in the subsequent school year.





- (5) Vocational opportunities in the community?
- (6) Condition and value of housing in residential areas and of commercial buildings in industrial areas?
- (7) Possible shifts in housing patterns or students' attendance because of racial integration measures?
- (8) Availability of community services?
- (9) Major highway and street networks and their probable future development?
- f. Are enrollment projections reviewed and updated annually?
- g. Does the general fund's budget regularly include funds to support demographic studies, staff, equipment, and reports?





Section III

Selection and Acquisition of the Site

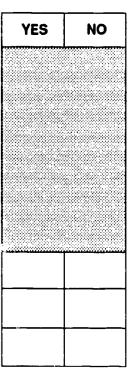
The selection of the school site is a critical part of a well-conceived long-range planning program. Site selection is tied to a number of considerations, such as: (1) an analysis of the demographic study to determine areas of projected student population growth and the numbers and ages of students expected; (2) a review of the size, location, grade levels, and attendance areas of existing schools and any proposed policy changes relating to these factors; (3) the district's transportation capabilities; (4) the determination of who will be involved in site selection; (5) the establishment of criteria by which a "proper" site is to be judged; and (6) the establishment of a time line to guide the process.

GOAL: To select and acquire a proper school site and to time its acquisition to precede actual need while trying to avoid state-imposed nonuse penalties

- 1. Desired practice. Because site acquisition can be a lengthy process, selection procedures should begin well in advance of expected need with the establishment of a broadly represented site selection committee. (This could be the master plan committee already established.) There are several reasons why sites should be purchased several years before actual need: (1) experience has shown that early purchase saves money in the face of steadily increasing land values; (2) early purchase helps ensure a good selection (as areas develop, availability is reduced); (3) postponement may result in the necessity of exercising eminent domain or in accepting a site that is too small, poorly located, or difficult to develop; and (4) tardy acquisition may delay plans for design and construction, thereby exacerbating overcrowding in existing schools.
 - a. Did a committee assist in site selection?

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- b. Did the committee begin its work at least six months before planned acquisition?
- c. Was site acquisition planned to occur at least three to five years before projected need?





		YES
d.	Was the Department of Education consulted prior to site acquisition, as stipulated in <i>Education Code</i> Section 39101?	
e.	Was the process that is specified in the California Environmental Quality Act (CEQA) adhered to?	
f.	Were local city and county agencies involved in site selection?	
g.	Was an architect involved in site selection?	
un sai co: ea:	derstood. Sites should be located to serve the proposed attendance area with maximum convenience and fety of access. Schools should be located in areas free from excessive noise, obnoxious odors, and toxic nditions (air, soil, water) and should be removed from such hazards as airports, electromagnetic fields, rthquake faults, and floods. The School Site Selection and Approval Guide and the School Site Analysis and Development Guide, both published by the Department of Education (see Selected References), should be used as references in establishing site selection criteria and in understanding the site approval process.	
a.	Were site selection criteria established prior to the identification of potential sites?	
b.	Was the Department of Education's School Site Selection and Approval Guide used as a reference?	
c.	Did the site selection criteria include such general categories as: (1) Safety?	

(5)	Topography?
(6)	Size and shape?
(7)	Accessibility?

2.

(8) Public services?

(2) Location?

(3) Environment?

(4) Soil characteristics?



NO

			YES	NO
	(9)	Utilities?		
	•	Costs?		
	(11)	Availability?		
	` •	Political implications (zoning, environmental impact reporting requirements, joint use, and so on)?		
	d. Were	several sites reviewed and ranked in order of merit?		
	e. Did t	he site selected compare favorably with the criteria established and with the order of ranking?		
		preliminary reviews and tests (geological, toxic, flood, airport proximity, and so on) acted prior to final selection?		
3.	is the nex	practice. Once alternative sites have been reviewed and a first choice has been made, acquisition at step. Negotiation for site acquisition should be handled by one person; e.g., facilities planner, manager, superintendent, or attorney (but not a board member). Two appraisals should be obthe governing board's inclination to pursue condemnation, if necessary, should be determined.		
	a. Did a	one person act as negotiator in site acquisition;		
	b. Was	this person someone other than a board member?		
	c. Were	two independent appraisals obtained?		
		the governing board's willingness or inclination to pursue condemnation, if necessary, mined?		
4.	grounds to accom district's	practice. Existing and proposed site plans should show the layout of existing buildings and parking and roads, and playfield areas as well as future additions and the expansions necessary modate each site's maximum proposed enrollment. This plan, prepared by an architect and the facilities planner, serves as a decision-making tool in planning future facilities needs and in in implementation strategies.		



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planner to accommodate maximum future enrollment?

Have all school campuses and proposed sites been planned by an architect and the district's facilities

Section IV

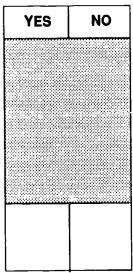
Determination of the Need for Educational Facilities

In the section on demographics, data are collected and analyzed that yield a projected number of students to be housed. This section provides the additional information necessary to determine actual facility needs. This information includes an analysis of existing facilities in order to determine student capacity and educational adequacy as well as an analysis of alternatives to construction, such as year-round education, extended-day schedules, changes in grade-level configuration, changes in attendance boundaries, and use of relocatable facilities to accommodate peak enrollments.

Once both quantitative and qualitative data have been collected and analyzed, existing adequate space can be compared with projected space needs. In an ongoing process, the difference between projected enrollment and adequate capacity provides a dynamic statement of actual facility needs, assuming that enrollment projections are updated annually and revised as factors change, as new facilities are added, and as alternatives to new construction are used.

GOAL: To determine the student capacity and educational adequacy of existing facilities and to evaluate alternatives to new construction

- 1. Desired practice. (Quantitative analysis.) The planning leader should perform, or supervise the conduct of, a classroom use analysis from which a determination of student capacity can be made. Adequate teaching stations should be defined and "loaded" according to an agreed-on classroom loading definition. Forms to assist in this activity may be obtained from the School Facilities Planning Division, California Department of Education. Refer also to the Guide for the Development of a Long-Range Facilities Plan (see Selected References).
 - a. Have those buildings been identified which do not count as "adequate area," as defined in sections 17740 through 17750 of the *Education Code* (short-term leased portables, structures that do not conform to the earthquake requirements of the Field Act, and so forth)?





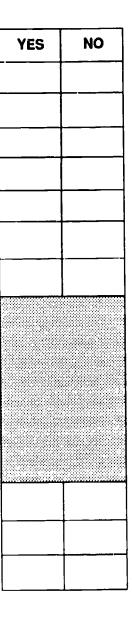
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		YES	NO
	b. Have criteria been established to identify instructional areas or teaching stations?		
	c. Are these criteria the same as those used by the State Allocation Board in awarding state funding? (If not, was a conscious decision made to establish other criteria?)		
	d. Has a floor plan of the facility been provided to assist in identifying teaching stations?		
	e. Is there a district policy and/or are there employee contract specifications for classroom loading?		
	f. Have the numbers of students been specified or "loaded" into each teaching station in accordance with the district's classroom loading standards and the state's classroom loading standards?		
2.	Desired practice. (Qualitative analysis.) The facilities planning leader, in cooperation with the instructional leader and the director of maintenance and operations, should conduct an evaluation of the physical condition and educational adequacy of existing facilities. A school facilities inventory should be prepared and kept updated. (See Appendix for suggested evaluation instruments.)		
	a. Was an evaluation of existing facilities performed by the facilities planning leader, the instructional leader, and the director of maintenance and operations?		
	b. Was a uniform checklist used to provide evaluation criteria?		
	c. Did the evaluation criteria include the following elements:(1) Site (size and layout)?		
	(2) Space (the size, number, utility, and flexibility of the various areas in the facilities and the relationships of these areas to each other)?		4
	(3) Light?		
	(4) Heat and air?		
	(5) Sound?		



(6) Aesthetics?

- (7) Equipment?
- (8) Availability of utilities?
- (9) Hazardous materials?
- (10) Maintenance?
- (11) Structural adequacy?
- (12) Future expansibility (how adaptable to change)?
- d. Was a facilities inventory system established?
- 3. Desired practice. (Quantitative/qualitative analysis.) In determining actual space needs, planners should be attentive not only to the student capacity of existing and proposed facilities but also to alternatives to new construction. Alternatives to be considered include: (1) year-round education; (2) extended-day schedules; (3) changes in grade-level configuration; (4) changes in attendance boundaries; and (5) use of temporary relocatable facilities (portables) to help smooth out the impact of peaks and valleys in future student enrollments. Portables can be brought in to accommodate peak enrollment and removed to adjust to the valley of the enrollment curve. This will reduce the risk of overbuilding and the subsequent closure of relatively more expensive permanent facilities.
 - a. Were alternatives to new construction thoroughly evaluated?
 - b. Were any alternatives to new construction actually used or planned?
 - c. If used, will these be permanent alternatives?





Section V

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Program Requirements

Changes in curriculum, teaching methods, and technology are forcing planners to rethink the designs of classrooms and other school facilities. The school must be designed to support the educational program, not to hinder it. This is achieved through educational specifications that serve as links between the program and the facility. Educational specifications consist of a series of interrelated statements that translate the educational program into space requirements. In other words, the program determines design criteria; it describes the activities that a proposed facility must support, their spatial relationships, and the numbers and types of spaces that will best accommodate the program.

GOAL: To develop a document (educational specifications) that describes the educational program and from which the architect can design a functional facility that matches the needs of the curriculum and that has the potential to enhance and reinforce the education the district desires for its students

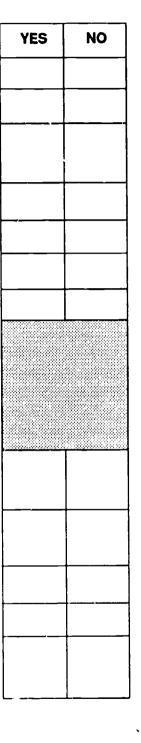
Educational specifications can be divided into four major components: (1) general project description; (2) educational program; (3) description of activity areas; and (4) general building considerations. Each of these components should be defined and described in the specifications in sufficient detail so that both the educator and the architect understand the scope of the project, what the program is, and what specific facilities are required to match and support that program.

- 1. Desired practice. (General project description.) This component should include a brief statement as to why the facility is being built, how large it will be, where it will be located, the population of students it is intended to serve (attendance area/student makeup), its estimated cost, the method of financing, the estimated time schedule for planning and construction, and the estimated date of opening.
 - a. Is there a stated rationale for the project?
 - b. Is there a narrative describing the district in general?
 - c. Is there a historical description of the growth pattern of the district?

YES	NO

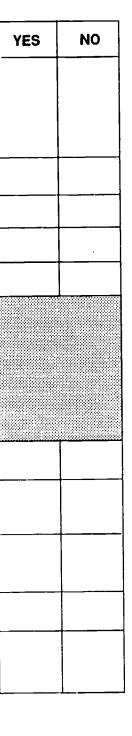


- d. Has the size of the facility been determined?
- e. Has the grade level of the facility been determined?
- f. Has a map been prepared that shows the location of the planned facility within the community and the proposed attendance area of the school?
- g. Is the new facility to serve all parts of the district on an open enrollment basis?
- h. Is the new facility to be a "magnet" school or a special school?
- i. Has a construction budget been prepared?
- j. Has a planning and construction time line been prepared?
- 2. Desired practice. (Educational program.) This component should be devoted to matters that are related to the curriculum, instructional methods, staffing, and support services. It should also include a statement of the school's philosophy and program objectives. The preparation of such a statement enables objectives to be reviewed and goals to be set. It provides the opportunity to identify the activities that must be carried out in order to reach agreed-on objectives.
 - a. Is there a statement of the goals and educational philosophy of both the district and the specific school being planned?
 - b. Are school-community relationships addressed, including community expectations and coordination and cooperation with other public agencies?
 - c. Have staff members been involved in establishing goals, objectives, and instructional strategies?
 - d. Have program objectives, activities, and teaching strategies and instructional methods been defined?
 - e. Have the needs and design implications of advanced technology, such as computers, integrated networks, and satellite transmission and reception, been identified?





- f. Has attention been given to providing flexibility in order to accommodate future teaching methods and future management styles, including variable group size, individualized instruction, team teaching, peer tutoring, cooperative learning, interdisciplinary teaching, use of computers, year-round education, and before- and after-school use?
- g. Has the school's administrative staff been identified?
- h. Have instructional support and pupil services programs been identified?
- i. Have general support services been identified?
- j. Have special programs been identified?
- 3. Desired practice. (Description of activity areas.) This component of the educational specifications describes the type, number, size, function, special characteristics, and spatial relationships of instructional areas, administrative areas, and service areas. Descriptions should be specific enough so that the architect will not have to guess at what will occur in each of these areas. The greater the detail and clarity of the educational specifications prepared, the greater the likelihood that the school district will acquire the facility it really wants.
 - a. Has the planned use or purpose of each area been specifically defined?
 - b. Has the number of areas required for each purpose been derived as the result of an analysis of the master schedule, planned course offerings, staffing patterns, and planned student groupings?
 - c. Has the number of teachers, paraprofessionals, and administrative and classified personnel using specific areas been identified?
 - d. Has the spatial relationship of one activity area to another been described?
 - e. Is there a description of space relationship requirements for the separation of large- and small-group areas and for convenient student and staff circulation?



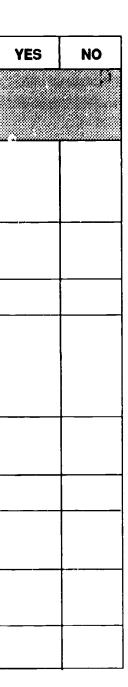


- f. Are instructional support and cocurricular facilities, such as areas for small- and large-group instruction, conferences, media centers, storage, teacher preparation, performing arts, and student government identified?
- g. Are environmental variables described as follows:
 - (1) Are acoustical needs, such as the acoustical isolation or enhancement of certain areas, identified?
 - (2) Are visual needs, such as lighting, fenestration (windows or openings for outside light and viewing), darkening capability, and avoidance of glare on video display terminals, identified?
 - (3) Are thermal requirements, such as types of heating, ventilation, air-conditioning, and energy conservation methods, identified?
 - (4) Have special aesthetic concerns, such as ambience, color, shape, texture, and materials, been identified?
- h. Have all utility needs, including electrical, gas, vacuum, compressed air, telephone, conduit/cable for advanced technology, and satellite dish, been identified?
- i. Has an energy management system been provided?
- j. Have storage requirements for individual activity areas and teaching stations been identified?
- k. Has extra storage space been considered for year-round educational programs?
- 1. Have display areas for chalkboards, tackboards, and display cases been identified?
- m. Have the number, kind, and size of furniture and equipment items been identified for each activity area?

YES	NO
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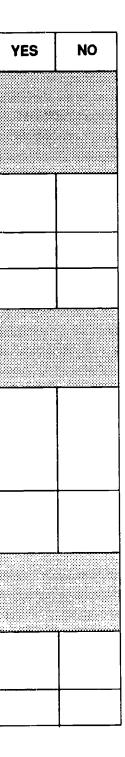


- 4. Desired practice. (General building considerations.) This component of the educational specifications should include features of the facility and the school campus in general that need to be related to the architect.
 - a. Campus size: Has the architect drawn a schematic layout of buildings, parking, roads, and athletic playground areas to demonstrate that the sizes of these facilities are adequate to meet all educational and service activity requirements?
 - b. Building design: Have both educational requirements and the cost of construction and operation of various designs been compared?
 - c. Total building area: Does the total building area conform to the state's standards?
 - d. Accessibility: Is there a description of how students, staff, and visitors will arrive at and depart from school? Are parking requirements defined? Are there provisions for emergency vehicles and service access? Is there a provision for handicapped access? Is bus loading and unloading separate from other vehicle traffic?
 - e. Circulation patterns: Are circulation patterns both within classrooms and between activity areas well planned?
 - f. Expandability: Has the total campus been planned to accommodate future expansion?
 - g. Communications systems: Are there descriptions of the public address, closed-circuit television, telephone, computer networking, and security systems?
 - h. Building security: Are security considerations incorporated in the building's design and communication systems?
 - i. Community use: Is there a determination of the potential use of the facility by the community?



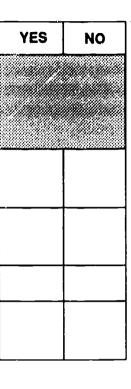


- 5. Desired practice. The educational planners should develop a complete set of educational specifications before an architect is asked to plan a school. It is the educators' responsibility to guide the architect in translating the educational program into school design; it is the architect's responsibility to provide design solutions. However, the development of both the educational specifications and the design is an evolutionary process that will require frequent interaction between educators and architect.
 - a. Were preliminary educational specifications developed prior to asking the architect to design the facility?
 - b. Was the architect involved in developing the educational specifications?
 - c. Were educational specifications developed with input from the instructional staff?
- 6. Desired practice. Educational specifications should serve as an important means of communication between educators and the architect. They should provide criteria against which the architect's final product can be evaluated.
 - a. Has there been ample communication among the planning leader, the users of the facility (teachers, students, parents, site administrators, and district administrators), and the architect in the development of the educational specifications and in the interpretation of these specifications into the design of the facility?
 - b. Has the design solution been matched against the written specifications to verify that the final plans represent what the district asked for?
- 7. Desired practice. All school board—approved program requirements should be communicated to the architect during preliminary planning stages, and no change should be made after the commencement of final working drawings.
 - a. Were all program requirements communicated to the architect before the commencement of final drawings?
 - b. Does the board (and superintendent) understand this process?





- 8. Desired practice. Educational specifications provide the planning team with an opportunity to reassess goals and objectives and to plan future programs and activities. They also provide an opportunity to evaluate the completed facility in terms of its educational adequacy and to suggest improvements in future facilities.
 - a. Has the planning team reassessed the educational program and identified future needs that will impact the design of the new facility?
 - b. Has the planning team evaluated existing facilities in terms of educational adequacy in support of current and planned programs and activities?
 - c. Has an evaluation been used to suggest design criteria for new facilities?
 - d. Has the planning team reported its findings and recommendations to the superintendent and the governing board?





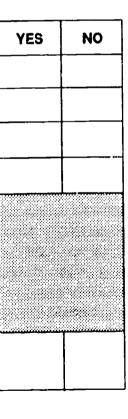
Section VI

Selection of an Architect

Generally, the district defines its goals and needs before hiring an architect, but quite often the architect can play a clarifying role in the needs assessment process. While the architect is primarily responsible for translating educational concepts and functions into facilities that are supportive of the educational program, he or she can provide valuable assistance in site selection, evaluation of existing facilities, alteration, modernization, and the integration of these elements with new construction concepts in order to form a total building master plan that is consistent with the district's goals and needs.

GOAL: To secure architectural services to assist in the planning and construction of facilities

- 1. Desired practice. The architect should be involved in all key phases of the planning process.
 - a. Was the architect selected early in the planning process?
 - b. Did the architect help clarify goals and needs?
 - c. Did the architect assist with site selection?
 - d. Did the architect help clarify educational specifications?
- 2. Desired practice. The selection of an architect is a very important decision that demands careful thought and preparation. Many districts form architect selection committees composed of three to five members who represent the community and the school district and provide professional facilities planning expertise. This committee screens initial applications based on written criteria. After interviewing applicants, the committee should further evaluate finalists through visits to the architects' offices and by interviewing previous clients of the architects.
 - a. Were the written applications screened by the committee in order to provide an appropriate number of architects to be interviewed?





b.	Were	e candidates further screened through interviews?	Ĺ
c.	Did t	the interviewers consider the following factors:	
	(1)	Experience?	ĺ
	(2)	Adequacy of technical personnel and availability of particular individuals for the project?	
	(3)	Whether the architect's office should be in relatively close proximity to the district?	
	(4)	Thoroughness?	ſ
	(5)	Creativeness within the context of sound construction practices and wise expenditure of public funds?	
	(6)	Adequacy of supervision?	ĺ
	(7)	Business procedures and recordkeeping on the job?	
	(8)	Financial responsibility?	
	(9)	Suitability of size and type of organization and methods of operation?	ĺ
	(10)	Willingness of the architect to make changes in plans at various points in the process?	
	(11)	Ability and inclination of the architect to protect the district's interests in his or her dealings with the contractor?	
	(12)	Each architect's references?	
d.	Were	e finalists further evaluated based on:	
	(1)	Visits to examples of their work?	
	(2)	Interviews with previous clients?	Ī

(3) Examination of typical documents, such as plans, specifications, and change orders?

(4) Visits to the architects' offices?

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YES

NO

- e. Does the contract with the architect include all the district's requirements, meet the State Allocation Board's requirements, and clearly state the amount and method of compensation?
- 3. Desired practice. Reviews and evaluations of the architect's performance should be conducted by the committee at appropriate periodic intervals and the findings should be referred to the governing board as well as to the architectural firm.

a.	Was a review and e	valuation of the	architect's	performance	conducted b	y the comm.	ittee?
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b. Were findings of the review referred to the governing board and to the architect?

YES	NO



Section VII

Financing for the Facility

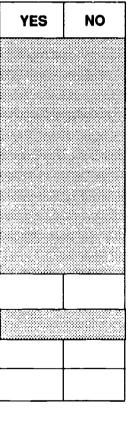
The financial component of the long-range facility master plan brings into balance (1) facility needs; (2) expenditures necessary to meet those needs; and (3) ways in which these expenditures will be financed. This balance is achieved through the development of a capital planning budget that is usually projected over a five- to ten-year period and reviewed annually. The budget allows (1) the cost of programs to be determined; (2) priorities to be established; and (3) sources of revenue to be identified. The budget becomes the key to an action plan to implement recommendations.

GOAL: To develop a capital planning budget that brings into balance facility needs, expenditures necessary to meet those needs, and ways in which expenditures will be financed

- 1. Desired practice. In addition to financial data collected in this stage, the facilities planning leader should develop a capital program budget based on data collected in the earlier stages of the master plan. Before a capital budget can be prepared, it is necessary to have the results of the following: (1) a demographic study that shows population changes and trends in pupil enrollment by study area; (2) educational program analyses that specify program requirements and changes in organizational structure that have an impact on facility needs; (3) a facilities survey that delineates the capacity of existing facilities to house projected student populations and to meet program requirements; (4) an analysis of alternatives to new construction; (5) a calculation of the costs of renovating, altering, or closing existing buildings or of constructing needed new buildings and buying sites; and (6) income estimates from various sources, such as local bonds, state aid, developer fees, special taxes, sale or lease of district-owned facilities, asset management programs, and joint ventures.
 - a. Was a capital planning budget prepared?

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- b. Was the preparation of the capital planning budget based on a critical assessment of:
 - (1) Demographics and projected enrollment?
 - (2) The adequacy of existing facilities to house students based on current and projected enrollments?





NO YES

- (3) Alternatives to new construction?
- (4) Educational program requirements?
- (5) Facility needs projected on a yearly basis over the next five to ten years?
- (6) Costs associated with planned improvements and/or alternatives?
- (7) Sources and availability of income, especially state aid?
- 2. Desired practice. A capital planning budget should list facilities' needs, their costs, and the recommended method of financing for each year for a period of five to ten years. This projected planning budget should be reviewed and updated annually. The most recent update then becomes the basis for actual budget figures for the next projection year. (Some facility needs, such as deferred maintenance and alterations, may be in the maintenance and operations budget and the work done by that department, but both budgeting and work should be coordinated with the facility planning department.)
 - a. Does the capital budget list facility needs such as:
 - (1) Site purchase?
 - (2) New construction?
 - (3) Modernization?
 - (4) Alterations?
 - (5) Deferred maintenance?
 - b. Does the budget itemize the cost of needed facilities?
 - c. Does the budget identify sources of income to cover listed expenses?
 - d. Does the budget set priorities for project funding?
 - e. Does the budget delineate a step-by-step implementation plan for project funding?

Section VIII

Construction of the School Building

After architectural plans have been developed to the satisfaction of the planning team and the governing board, they must be converted into a school building by the cooperative efforts of the architect, the school planner, and the builder. The conversion from plans to the actual building is a crucial part of the planning and construction process. It includes preparing contracts and building specifications, following bidding procedures, supervising construction, making payments, and accepting the completed facility. Common to all these activities is an emphasis on the legal and technical aspects of contracts and construction and good working relationships among the architect, contractor, building inspector, and school facilities planner, or the school district's designee who is responsible for the planning and construction program.

GOAL: To translate satisfactorily the approved architectural plans into a quality school building and to do so within the budget and within the scheduled time

1. Desired practice. The traditional system of construction of public works is to bid each project, usually in its entirety, to be completed under the responsibility of a single California licensed architect and a single California licensed and bonded general contractor. As complexities and costs of construction have increased, another approach has emerged called construction management. Under this system, a construction manager (who coordinates the project from design to completion of construction) replaces the general contractor, while the subcontractors become prime contractors and bid on the various jobs that compose a project.

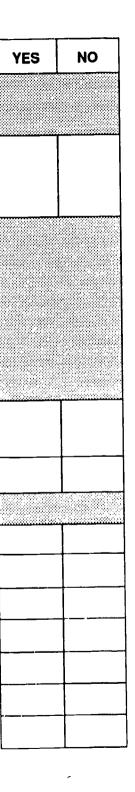
Proponents of the construction management concept claim it is an innovative process that will save money and that makes it possible to complete a high-quality project in less time than under the traditional method. Opponents claim that construction management merely adds one more layer of management and expense, makes more work for the owner, increases financial risks for the owner, and creates conflict between the construction manager and the architect and that, although construction management has worked well in the private sector on large projects, school projects are generally too small to benefit from the construction management process.



Given the differing views on construction management, the governing board should carefully investigate this process before deciding whether it wants to use this method or the traditional system of construction.

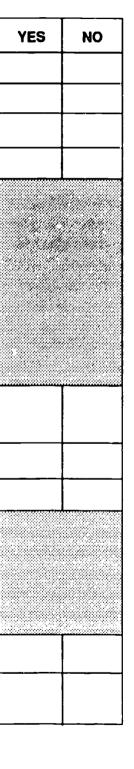
Did the governing board weigh the advantages and disadvantages, for the district's particular situation, of construction management versus the traditional construction system before deciding which system to use?

- 2. Desired practice. The architect usually prepares the contract documents as part of his or her responsibility for preparing the building specification document. In addition to specifying details of construction and materials, the architect should specify in this document the starting time; number of days allowed for construction; expected completion date; requirements for payment bond, bid bond, and performance bond; workers' compensation and insurance terms; the prevailing wage to be paid; subcontractors to be used; the terms of the noncollusion affidavit; provisions for change orders; provisions for negotiations and arbitration; and such other items as are found in the standard American Institute of Architects's contract specifications.
 - a. Was a contract and specification document prepared by the architect and/or the district's legal counsel?
 - b. Did the document comply with the Business and Professions Code?
 - c. Did the document specify the:
 - (1) Details of construction and materials?
 - (2) Starting time?
 - (3) Number of days allowed for construction?
 - (4) Expected completion date?
 - (5) Terms of payment bond, bid bond, and performance bond?
 - (6) Workers' compensation and terms of liability insurance?
 - (7) Prevailing wage to be paid?





- (8) Subcontractors to be used?
- (9) Noncollusion affidavit to be used?
- (10) Provisions to be included in change orders?
- (11) Provisions established for negotiations and arbitration?
- 3. Desired practice. After final working drawings and specifications are completed and approved, they are submitted to contractors who have responded to the request for bids. To avoid giving one or more contractors an unfair advantage, the architect should coordinate plans, specifications, and questions concerning the project. The publication of the notice to receive bids should be accomplished in accordance with legal requirements. The notice should allow bidders at least three weeks to estimate costs and prepare bids. Bids should be opened in public at the exact time advertised. Bids should be inspected to confirm that all required documents are in order. Documents should include: (1) bid form, signed with dollar amount; (2) bid bond; (3) designation of subcontractors; (4) a noncollusion affidavit; and (5) a certificate regarding workers' compensation and liability insurance.
 - a. Were all plans, specifications, and questions concerning the project coordinated through the office of the school district's architect?
 - b. Were bids opened on time and in public?
 - c. Were bids inspected to ensure that all required documents were included?
- 4. Desired practice. After bids have been opened and tabulated, they should be submitted to the governing board for the awarding of the contract, which usually goes to the lowest responsible bidder. If the project is funded by the state, bids should be submitted to the Office of Local Assistance for review within 48 hours and prior to action by the governing board. Legal counsel should be involved to make certain that bid and contract documents are properly prepared and that the award is properly authorized.
 - a. After the bid opening, were bids submitted to the governing board for acceptance?
 - b. If the project is state-funded, were bids submitted to the Office of Local Assistance for review within 48 hours of bid opening and prior to submission to the governing board for action?





- c. Were contract documents reviewed by legal counsel?
- d. Was the bid awarded to the lowest responsible bidder?
- 5. Desired practice. Following the governing board's acceptance of the lowest responsible bid and award of contract, the bidder must submit a signed owner-contractor agreement, workers' compensation and insurance certificates, a payment bond, a performance bond, and a guarantee within the time required. All previously submitted documents (e.g., bid forms, specifications, drawings, and addenda) are considered part of the final owner-contractor agreement. The bidder should certify that no material containing asbestos will be used during the project's construction.
 - a. Was an agreement signed by the appropriate district official and the lowest responsible bidder?
 - b. Did the contractor post payment and performance bonds?
- 6. Desired practice. Payments to contractors are commonly made on a monthly basis. The contractor submits a request for payment to the architect, who approves payment based on the percent of work completed. A certain percent of the contract amount is withheld, pending fina? completion, to cover liens which may have been filed by subcontractors and for other contingencies. problems arise with payments, legal counsel should be consulted.

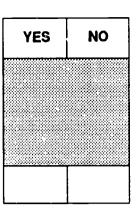
Does the district have a system of internal controls to ensure that timely payments are made only after the architect's approval of the work completed?

- 7. Desired practice. All new school construction projects (regardless of cost) and all reconstruction or alteration projects that exceed \$20,000 require a building inspector hired by the owner. It is the local school board's responsibility to provide for and require competent, continuous inspection by an inspector who is satisfactory to the architect or engineer in charge and approved by the Office of the State Architect.
 - a. Did the governing board hire competent, continuous inspectors on all projects, as required?
 - b. Was the inspector who was hired satisfactory to the architect or engineer in charge of the project?
 - c. Was the inspector approved by the Office of the State Architect?

YES	NO
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8. Desired practice. When the building is ready for occupancy and the notice of completion has been filed, the governing board formally accepts the facility. Occupancy should not occur prior to the notice of completion. If work is not completed satisfactorily, premature occupancy may interfere with the contractor's work, may pose safety hazards, and may be regarded as tacit acceptance of the facility, which could lead to difficulties and misunderstandings with the contractor.

Was the notice of completion filed before the building was occupied?





Section IX

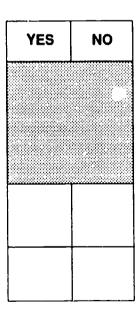
Users' Orientation and Post-Occupancy Evaluation

A building functions best when its design is in harmony with its intended use and when the users understand the program that led to its design. The program concepts that guided the architect's design are probably well understood by those on the planning team, but not all users were on the planning team; therefore, the suitability of the building to the needs of its users can be enhanced through an orientation program in which the design and intended uses are thoroughly explained and demonstrated.

Once orientation has been accomplished and the building is in use, the results of planning, design, and construction can be evaluated. Post-occupancy evaluation of the just-completed facility not only tells how well it is meeting its intended use but also provides corrective feedback for the next planning cycle.

GOAL: To establish and carry out an orientation program so that users of the facility can better understand the design rationale and become familiar with the way in which the building is supposed to work

- 1. Desired practice. Orientation to the new facility should precede its use. A new facility's acceptance and users' satisfaction will be enhanced if its intended use and design rationale are understood. An orientation program designed to serve this purpose can be organized to include open-house visitations, demonstrations, media features, brochures, and users' manuals.
 - a. Was an orientation program implemented for classified and certificated staff, students, parents, and the general public?
 - b. Did the orientation program include users' manuals for both teachers and maintenance and operations staff?



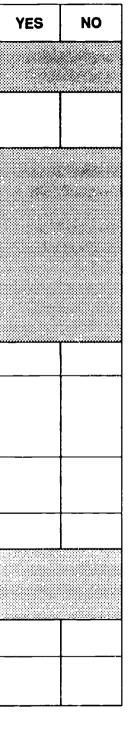


2.	Desired practice.	The orientation program is the responsibility of the architect, the faci	lity's planner,
	and/or the educa	ional administrator.	

Was the responsibility for the orientation program shared by the architect, the facility's planner, and/or the educational administrator?

GOAL: To conduct a post-occupancy evaluation to see whether the building does what it was meant to do and to provide corrective feedback for use in the next planning cycle

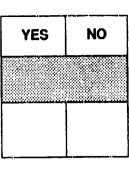
- 1. Desired practice. One of the frequently neglected aspects of long-range facility planning is post-occupancy evaluation. Once the building is finished and in use, it is sometimes easy to neglect an evaluation that would provide constructive feedback for future facilities. The evaluation should be formalized through the use of a suitable questionnaire or some other structured evaluation instrument, such as the Facilities Performance Profile, published by the California Department of Education, or the Guide for School Facility Appraisal, published by the Council of Educational Facility Planners, International.
 - a. Was a formal, structured evaluation performed?
 - b. Were the results of the evaluation used to:
 - (1) Compare the product with program specifications to see whether the district received the product it said it wanted?
 - (2) Compare the facility with emerging program requirements to see whether the district still needs the product it built?
 - (3) Provide the architect with corrective feedback to be used in the next planning cycle?
- 2. Desired practice. Post-occupancy evaluations should be conducted at the end of the first year of operation and periodically during the next three to five years as use of the facility provides information about its operation and performance.
 - a. Was an evaluation performed at the end of the first year of occupancy?
 - b. Were other evaluations performed at appropriate intervals during the first three to five years of operation?





3. Desired practice. Post-occupancy evaluation is the responsibility of the district's facility planner and/or educational planner.

Did the responsibility for the evaluation reside with the facility planner and/or educational administrator?





Selected References

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Facilities Performance Profile. Sacramento: School Facilities Planning Division, California Department of Education, 1988.

An instrument to evaluate school facilities in ten categories: planning, finance, site, space, light, heat and air, sound, aesthetics, equipment, and maintenance. Ratings can be summarized on a "profile rating wheel."

Guide for Planning Educational Facilities. Columbus, Ohio: Council of Educational Facility Planners, International (CEFPI), 1990.

An authoritative, comprehensive, and illustrated guide to the planning of educational facilities from the conception of need to the use of the facility. Copies of this publication are available for \$45 each, less 15 percent for CEFPI members, from the Council of Educational Facilities Planners, International, 941 Chatham Lane, Suite 217, Columbus, OH 43221.

Guide for the Development of a Long-Range Facilities Plan.
Sacramento: School Facilities Planning Division, California
Department of Education, 1986.

A guide in outline form and divided into five parts: educational program, facilities, demographic study, implementation plan, and evaluation plan. The guide contains forms that are related to the capacity, utilization, and evaluation of facilities. Copies of this publication are available for \$2.50 each, plus sales tax for California residents, from the Bureau of Publications, Sales Unit, California Department of Education, P.O. Box 271, Sacramento, CA 95802-0271.

Hawkins, Harold L., and H. Edward Lilley. *Guide for School Facility Appraisal*. Columbus, Ohio: Council of Educational Facility Planners, International, 1986.

A comprehensive instrument to measure the quality and educational effectiveness of school facilities. The appraisal criteria and instruments are categorized into six major areas:



the school site, structural and mechanical features, plant maintainability, school building safety, educational adequacy, and environment for education. Copies of this publication are available for \$20 each from the Council of Educational Facilities Planners, International, 941 Chatham Lane, Suite 217, Columbus, OH 43221.

School Site Analysis and Development Guide. Sacramento: School Facilities Planning Division, California Department of Education, 1987.

A guide that presents in chart form recommended sizes for school sites based on the requirements of the educational program according to enrollment and grade level. Sizes in square feet and acreage are determined for playfield areas, buildings and grounds, and parking and roads. Dimensional layouts for numerous playfield activities are included. The guide is used by the Office of Local Assistance, California State Department of General Services, in determining allowable acreage under the State Aid building program. Copies of this publication are available from the School Facilities Planning Division, California Department of

Education, P.O. Box 944272, Sacramento, CA 94244-2770.

School Site Selection and Approval Guide. Sacramento: School Facilities Planning Division, California Department of Education, 1987.

Site selection criteria with evaluation forms. The guide contains information about safety considerations and outlines the site approval procedures required by the California Department of Education.

State Allocation Board Applicant Handbook. Sacramento:
California State Department of General Services, 1986.
A handbook that sets forth the policy adopted by the State
Allocation Board under which the Office of Local Assistance implements the School Building Lease-Purchase
Law of 1976. Copies of this publication are available for
\$35 each, plus sales tax for California residents, from the
Office of Local Assistance, California State Department of
General Services, 501 J Street, Suite 350, Sacramento, CA
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9 i

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