

Providing Quality School Facilities for the Nation's Children: An Invitational Forum for State School Facilities Leaders

February 4-5, 2001



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Sponsored by
The National Center for the 21st Century Schoolhouse
San Diego State University

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Contents

Forward	3
Participants	4
Introduction	6
PART I: Areas of Concern	7
Finance Issues	7
Oversight Issues	8
Design Issues	9
PART II: Priorities for a National Center	12

Forward

“If you are in a shipwreck and all the boats are gone, a piano top buoyant enough to keep you afloat that comes along makes a fortuitous life preserver. But this is not to say that the best way to design a life preserver is in the form of a piano top.”

R. Buckminster Fuller, Operating Manual for Spaceship Earth.

The National Center for the 21st Century Schoolhouse is an enterprise created on the foundation that due to changes in educational expectations, combined with a relatively narrow means for changing school facilities, we may be building and/or renovating our schools in the “form of a piano top.”

It is a simple fact that communities expect schools to do and accomplish different tasks than what those same communities expected of schools in the 1950’s and 1960’s, when the last great school facilities explosion took place to accommodate the “baby boomers.” Along with expectations of getting all students to more rigorous academic standards, communities expect their schools to provide breakfast and lunch services; health screening services; recreational centers; social service centers; adult education and family literacy services; day care facilities and parent participation centers. Many districts are forced to take advantage of “piano tops” to address these needs and it is our hope to make available processes which will alleviate such reality.

This forum represents the National Center’s first activity in defining needs, as well as some solutions, for designing “learner centered” schools to address emerging programmatic demands. To that end, I sincerely thank the participants, the persons who came together to make the arrangements and the skilled professionals who donated their time to write this document.

It is a good beginning.

John Grant

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Introduction

In the end, we found that designing schools for the twenty-first century is a learning process in itself.

--George H. Copa, August 1999

In June, 2000, the National Center for the 21st Century Schoolhouse was established at San Diego State

University for the specific purpose of bringing together our best thinking about curriculum, instruction, and school

design in order to ground the work of educators, design professionals and communities in research-based

understanding of sound practice. This is a turbulent time in which to undertake such a mission:

- • A time of standards-driven, outcomes-oriented educational reform;
- • A time of historic growth in an increasingly diverse school enrollment;
- • A time in which many of our existing schools are in serious need of renovation and modernization;
- • A time of rapid technological change.

Where does one begin pursuing such a mission in such a context?

As its first public act, the National Center organized an invitational forum for a broadly representative group of state school facilities leaders to consider the following questions:

- • What are the major issues facing the individual states and the nation as a whole with regard to providing quality school facilities for children?
- • How might the newly established National Center be most useful in helping to meet those challenges?

Part I: Areas of Concern

What did we learn from these discussions about the issues that are of concern to state facilities leaders? Broadly speaking, concerns related to matters of finance, matters of oversight and matters of design.

Finance Issues

Equitable Support

There is considerable variation among the states with respect to state financial support for school building construction, maintenance and renovation. Further, there is considerable variation in the ability of individual communities and school systems within states to finance school construction and modernization projects. Some states, such as Wisconsin and Texas, have little involvement in financing school construction. Arizona, on the other hand, funds the entire cost of needed school construction, without a formal limitation on the amount of funds available to the state School Facilities Board. A number of states have experienced lawsuits relating to equitable support to school districts for building construction. A lawsuit in California went beyond equity in access to funding and addressed equitable standards of quality in school facilities.

Equity issues within states are further complicated by differences in costs of construction in individual communities and in the capacity of individual communities to assume bonded indebtedness with the result that simply providing equitable financial support does not necessarily produce equitable facilities across communities. Major contributors to differential costs of construction are site acquisition and site development costs. In major cities like New York and Los Angeles, the cost of property acquisition has a radical impact on the overall cost of building new schools, while in rural or newly-developing areas, land costs are substantially less.

Oversight Issues

As states vary with respect to the level of state support for school facilities development, they also vary in terms of the organizational structure in which support and oversight are provided and in terms of the extent to which state oversight is or can legally be exercised. In both Maryland and California, for example, four state agencies are involved in the process of school building development; in Arizona, the process is entirely under the supervision of the state's School Facilities Board; in Texas, a single member of the Commissioner of Education staff within the Division of State Funding oversees compliance with state school facilities standards for new construction and renovation primarily through a process of certification at the local level. Beyond oversight issues relating to new construction and major renovation, states also vary with respect to involvement in ongoing monitoring and inspection. Some states, such as Wisconsin, Illinois and Florida, have made major progress in conducting statewide inventories of existing school facilities and needs for renovation or replacement.

Design Issues

State leaders have a shared concern about designing (or redesigning) schools well for today's and tomorrow's educational programs. They are interested in connecting design standards to a foundation in research: What are the features of schools in which students are learning? What are the effects of building design on student performance? How can we distinguish between fads and significant trends in educational programming in order to avoid costly mistakes in the design of school facilities? At the same time, state leaders are cautious about using research evidence, particularly findings based on averages or findings that mask differences in effects on specific groups of students, to enshrine some set of minimum standards for school design that could have the effect of stifling innovation and local initiative.

State leaders are also concerned about balancing quality issues against economic issues in an era in which education finds itself in greater competition with other social services for scarce resources and about balancing improvement of the educational usefulness of new or renovated facilities against building schools fast and cheap

State leaders are specifically concerned about a number of issues that directly bear on design:

- • Growth: In those states and school systems that are experiencing rapid growth, a priority can be placed on simply providing sufficient space to accommodate enrollment. Moreover, while there is a tendency to associate growth with new residential development, there is, in fact, substantial growth occurring in urban areas. What are the special challenges of providing for increased enrollment in the urban context?
- • Class size: A number of states have pursued significant reductions in class size, particularly in primary grades, despite the fact that the research literature has

not provided a clear picture of the effects of class size on student learning. At the same time, school design standards often include guidelines relating to the size of classrooms. Should such standards be reconsidered? Are smaller classes likely to represent a long-term trend?

- • School size: Attempting to organize students into small learning communities is a common educational reform initiative that is particularly notable in secondary schools. Should communities move toward developing small high schools of 300-500 students rather than building schools to serve 2000? Should large high schools be designed or redesigned to better serve smaller clusters of students?
- • Charter schools: What are the short- and likely long-term impacts of charter schools on school systems and states? To what extent are charter schools demanding access to existing public school facilities or alternatively drawing students away from those existing facilities? Are charter schools with long-term charters more able to contend with facilities issues than those whose charters are of shorter duration?
- • Curricular change: Is current interest in integrated curriculum likely to represent a long-term trend and what are the implications for school design? What kinds of facilities are needed to prepare students for entry into the workforce? What are the facilities implications of mainstreaming in special education?
- • Technology: How do schools need to be designed in order to be responsive to changes in educational technology? What effects will technology have on where learning takes place? *Instructional* technology aside, what should facilities developers be concerned about when it comes to the engineering of the buildings themselves—issues like power supply, climate control and energy efficiency?

- • Flexibility and versatility: If schools will need to respond to changes that cannot now be anticipated, how can they be designed for flexibility and versatility?
- • Sustainability: Most of the schools that children will attend over the next 50 years are already built. How do we make sure that these facilities can be used effectively? How do we design new schools or redesign existing facilities so that they can more readily permit sustained use?

State leaders are also wondering what can be learned by looking at how other industries handle facility planning. To what extent are hotels and hospitals dealing with similar problems such as the impact of new technology or the need to be able to change the use of space over time? Given changing demands for school facilities, should states and school systems consider moving away from outright ownership of school buildings and towards such alternative approaches as leasing of needed space?

While there are some common issues among the states, local contexts and governance structures differ. Why do existing governance and finance structures for providing school facilities work well or not so well? What have been the compelling arguments and conditions that have produced those structures? How did each state arrive at their present arrangements for dealing with school facilities development and what are the strengths and weaknesses of those structures? If the National Center sees itself as aiding states and local communities in making good decisions about school facilities, the range of issues to be considered is extensive.

Part II: Priorities for a National Center

If those are the issues that are of concern to state school facilities leaders, what role might the National Center play in helping both the states and individual school systems to address them? Participants in the leaders forum offered an array of possibilities:

Research: A wide range of questions that call for further research was identified:

- • What is the relationship between current standards for school facilities and educational research? Is there good reason to suppose that X square feet per student bears some relationship to educational effectiveness?
- • What are the issues that are particular to school facilities development/redevelopment in the urban context? Who is being successful in this area? Can non-traditional school configurations—smaller grade ranges, multiple uses of property such as educational and residential—help address problems of urban school development?
- • How can we provide adequate facilities at lower cost?
- • Of the myriad educational reform initiatives currently being promoted, which represent significant movements within education and what are the facilities implications of those movements?
- • What are the implications of advances in technology, not just for the way we teach within schools themselves but for the roles that schools and technology will serve in the educational systems of the future? Is it likely that students will continue to do most of their formal learning within a school building or do other models show promise? How do we plan for appropriate technology? How do we provide for equitable access? What are the educational effects of various kinds and uses of technology?

- • Most post-occupancy evaluations of school facilities consider only the satisfaction of users in the short term. What is the long-term effectiveness of school buildings?
- • What are some possibilities for multi-agency development and use of facilities such as swimming pools, libraries, law enforcement, social services or performing arts facilities? What kinds of limitations arise on joint use? What are the possibilities for joint use with private industry?
- • What can we learn from practices and trends in the development of school facilities in other countries?
- • What should the facilities process look like from initial planning through the entire life cycle of a building?

Design standards and processes: Can reasonable standards be formulated that leave appropriate room for innovation? Could the Center identify multiple models—an “arsenal” of design processes and standards--that are flexible enough to fit diverse local contexts? What are the characteristics of various alternatives?

Brokering knowledge and expertise: There are a number of established and new organizations and “centers” addressing various aspects of school facilities development, of which the National Clearinghouse for Educational Facilities, the Thomas Jefferson Center for Educational Design at the University of Virginia, and the Council of Educational Facilities Planners International are examples. One possibility for the National Center might be to serve as a broker of the specialized knowledge and expertise being generated through these sources—in a sense, helping school systems to “connect the dots” and make effective use of resources that are already available.

Identifying a niche: Alternatively, the Center could identify a particular niche—such as networking state leaders or concentrating on such educational issues as how

reform should impact facilities—in which it is specialized. Perhaps pursuing this direction would offer potential for sub-contracting with the National Clearinghouse as the expert in that niche area.

Advocacy: As an agency that does not have a vested interest in decisions being made by state or federal government or by local school authorities, the Center might be called upon to provide authoritative and objective guidance to such jurisdictions.

Training: State leaders identified a broad range of potential clients who might be served by training that the National Center could provide. In addition to local school system superintendents, the Center might develop appropriate training programs for school facilities managers, site administrators, design professionals, construction managers and local communities embarking on school design or redesign projects. Such training might be delivered in a variety of ways and in a variety of venues. Both certification and graduate programs could, of course, be offered at San Diego State. Other alternatives, however, might include design of internet-based interactive distance learning programs, conference workshops in conjunction with such organizations as CEFPI, the National School Boards Association, or the American Institute of Architects (AIA). The Web can be an effective tool for training if Web-based training is interactive (like the SIM City game), and not just descriptive.

- • The Center could conduct symposia on specific topics related to school facilities and produce reports documenting the proceedings.
- • The Center could provide certification programs for such specific groups as facilities planners, school and school system administrators, and design professionals.
- • The Center could host additional forums on school facilities issues targeting particular interest groups such as staff to legislators (the National Governors’

Association might be useful in identifying potential participants), or curriculum leaders (perhaps making connections through the Council of Chief State School Officers).

- • The Center could try to address the full spectrum of school facilities issues from program and building design through sustainability, or carve out a slice of that spectrum.

Clients: Who are the audiences that the Center might address? Graduate programs in school administration, for example, give little attention to facilities issues. How do you manage facilities development and construction? How do you deal with problems such as maintaining air quality? What are the construction financing options? How do you insure that ongoing maintenance is provided for in school system budgets? What are the cost impacts of doing so or not doing so? What kinds of monitoring are appropriate? Where does one find effective monitoring/inspection systems? Audiences might include superintendents or future superintendents, business managers, facilities managers, teachers, architects, school boards.

State school facilities leaders made it abundantly clear that there is no shortage of work to be done. Selecting from the long menu of possibilities and establishing cooperative working relationships with others who are actively engaged in school facilities work will present exciting challenges as the National Center for the 21st Century Schoolhouse begins its work.