HCR
24

HFIN
FILE

new schools WHILE REALIZING ~~and realize~~ cost savings; and

WHEREAS the use of prototype school designs reduces future ~~routine and major~~ maintenance cost ~~and improves~~ BY IMPROVING a school district's maintenance program through the use of standardized building components, systems, and products; and

WHEREAS school districts experience substantially fewer problems during the first school year in a prototype school, thereby reducing the school district's costs and improving the ~~teaching environment for teachers and~~ learning environment for students AND TEACHERS; and

WHEREAS public facilities should be designed to accurately reflect the unique needs of our subarctic and arctic environments, and northern design principles can help minimize annual operating and maintenance costs;

BE IT RESOLVED that the Alaska State Legislature encourages school districts to use prototype school designs wherever feasible so future school classrooms can be constructed MORE QUICKLY ~~quicker~~ and funds maximized; and be it

MOVE THE RESOLVE TO THE THIRD SPOT

FURTHER RESOLVED that the Governor is requested to direct the Department of Education to develop prototype school designs ~~for elementary grades~~ in consultation with engineering and architecture design professionals, including their statewide and REGIONAL organizations, who are familiar with the unique climatic conditions in this state as well as other conditions that affect application of appropriate school designs; and be it

FURTHER RESOLVED that the Governor is requested to direct the Department of Education to consult with the bond reimbursement and grant review committee established under AS 14.11.014 in developing incentives for school districts to use prototype school designs in school construction funded through the education l facilities maintenance and construction fund (AS 37.05.560); and be it

FURTHER RESOLVED that the Governor is requested to direct the Department of Education, in those instances where a prototype design may not be appropriate, to identify components within prototype building designs that can be standardized and can be incorporated into the school design; and be it

FURTHER RESOLVED that, if statutory changes are necessary to implement these incentives, the Department of Education is requested to report suggested statutory changes to the legislature by March ~~1~~ 15, 1998, so the changes can be considered by the Second Regular Session of the Twentieth Alaska State Legislature.

HOUSE COMMITTEE REPORT

(11)
Date Referred to Committee: February 6, 1998

FURTHER REFERRALS:

Date of Committee Action: 2/18/98

The FINANCE Committee considered: HCR 24

HOUSE CONCURRENT RESOLUTION NO. 24 PROTOTYPE SCHOOL DESIGN

Relating to the use of prototype designs in public school construction projects.

recommends it be replaced
with the following committee substitute CSHCR 24 (FIN) [ ] the same title [ ] a new title

[ ] additional referral to ____________ Committee
[ ] attached amendment(s)

ADOPTS: ____________ Letter of Intent

ATTACHES NEW FISCAL NOTE(s): (Dept) APPROVES PREVIOUS: (Dept/Date)

[ ] fiscal note(s) ____________ [X] fiscal note(s) DOE, 2/6/98

[ ] zero fiscal note(s) ____________ [ ] zero fiscal note(s) ____________

SIGNING WITH RECOMMENDATIONS		DP	DNP	NR	AM
Gene Therriault	Therriault	X			
Eldon Mulder	Mulder	X			
Terry Martin	Martin	X			
Eric Kohring	Kohring	X			
Joe N. Davies	Davies	X			
[illegible]	Grussendorf			X	
Carl E. Moses	Moses	X			
[illegible]	Kelly	✓			
[illegible]	Foster	X			

CHAIR'S SIGNATURE Gene Therriault

FISCAL NOTE

No: 1

Bill Version: CSHCR 24(STA)

(H) Publish Date: 2/6/98

STATE OF ALASKA
1998 LEGISLATIVE SESSION

Title: Prototype School Design

Sponsor: House Rules
Requester: House State Affairs

Dept. Affected: Education
BRU: School Finance
Component: Educational Facilities Support
Component Serial No. 1957

Expenditures/Revenues (Thousands of Dollars)

OPERATING EXPENDITURES	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04
Personal Services						
Travel						
Contractual						
Supplies						
Equipment						
Land & Structures						
Grants & Claims						
Miscellaneous						
TOTAL OPERATING	*	*	*	*	*	*
CAPITAL EXPENDITURES						
CHANGE IN REVENUES ( )						

FUND SOURCE (Thousands of Dollars)

	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04
1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type)						
TOTAL	*	*	*	*	*	*

Estimate of any current year (FY98) cost:

POSITIONS

Full-time						
Part-time						
Temporary						

ANALYSIS: *(Attach a separate page if necessary)*

The fiscal impact of this resolution is indeterminate at this time. Total costs for either portion of the resolution for either portion of the resolution require further definition before costs may be determined. This includes definition of the types of incentives that might be utilized, as well as a clarification of the meaning of "core school functions".

Prepared by: Michael Morgan, PMP — Phone: 465-1858
Division: Educat[illegible] Support Services/Facilities Section — Date: 2/4/98
Approved by: Shirley [illegible]olloway, Ph.D. — Date: 2/4/98
Agency: Commissioner

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COMMITTEE COPY

Adopted
2/18/98

BILL ID: CSHCR 24(FIN)

CS FOR HOUSE CONCURRENT RESOLUTION NO. 24(FIN)
~~01~~ Relating to the use of prototype designs in public school construction projects.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS art. VII, sec. 1, Constitution of the State of Alaska, requires the state to establish and maintain a system of public schools to meet the educational needs of children throughout the state; and

WHEREAS the Alaska State Legislature recognizes the crucial role that local school districts serve in the state in meeting this most important constitutional responsibility; and

WHEREAS the Alaska State Legislature understands the challenges school districts face to ensure Alaska's children have skilled teachers, quality curriculum, and safe schools; and

WHEREAS continued growth is projected in the state's school age population that will increase the need for new schools and place further pressure on state and school district budgets; and

WHEREAS prudent stewardship of state resources requires that every effort be made to get the best value for each state dollar spent; and

WHEREAS use of prototype school designs has enabled the Municipality of Anchorage, Fairbanks North Star Borough, Kenai Peninsula Borough, and Matanuska-Susitna Borough school districts to more quickly respond to their district's need for new schools while realizing cost savings; and

WHEREAS the use of prototype school designs reduces future maintenance cost by improving a school district's maintenance program through the use of standardized building components, systems, and products; and

WHEREAS school districts experience substantially fewer problems during the school year in a prototype school, thereby reducing the school district's costs and improving the learning environment for students and teachers; and

WHEREAS public facilities should be designed to accurately reflect the unique needs of our subarctic and arctic environments, and northern design principles can help minimize annual operating and maintenance costs; and

BE IT RESOLVED that the Alaska State Legislature encourages school districts to use prototype school designs wherever feasible so future school classrooms can be constructed more quickly and funds maximized; and be it

FURTHER RESOLVED that the Governor is requested to direct the Department of Education to develop prototype school designs in consultation with engineering and architecture design professionals, including their statewide and regional organizations, who are familiar with the unique regional climatic conditions in this state as well as other conditions that affect application of appropriate school designs; and be it

FURTHER RESOLVED that the Governor is requested to direct the Department of Education to identify components within prototype building designs that can be standardized and can be incorporated into the school design in those instances where a prototype design may not be appropriate; and be it

FURTHER RESOLVED that the Governor is requested to direct the Department of Education to consult with the bond reimbursement and grant review committee established under AS 14.11.014 in developing incentives for school districts to use prototype school designs in school construction funded through the educational facilities maintenance and construction fund (AS 37.05.560); and be it

FURTHER RESOLVED that, if statutory changes are necessary to implement these incentives, the Department of Education is requested to report suggested statutory changes to the legislature by March 15, 1998, so the changes can be considered by the Second Session of the Twentieth Alaska State Legislature.

COPIES of this resolution shall be sent to Shirley J. Holloway, commissioner of education, to the Alaska State Board of Education, and to the school board of each district.

0-LS1345\F

CS FOR HOUSE CONCURRENT RESOLUTION NO. 24(STA)

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTIETH LEGISLATURE - SECOND SESSION

BY THE HOUSE STATE AFFAIRS COMMITTEE

Offered: 2/6/98
Referred: Finance

Sponsor(s): HOUSE RULES COMMITTEE BY REQUEST OF THE DEFERRED MAINTENANCE TASK FORCE

A RESOLUTION

Relating to the use of prototype designs in public school construction projects.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS art. VII, sec. 1, Constitution of the State of Alaska, requires the state to establish and maintain a system of public schools to meet the educational needs of children throughout the state; and

WHEREAS the Alaska State Legislature recognizes the crucial role that local school districts serve in the state in meeting this most important constitutional responsibility; and

WHEREAS the Alaska State Legislature understands the challenges school districts face to ensure Alaska's children have skilled teachers, quality curriculum, and safe schools; and

WHEREAS continued growth is projected in the state's school age population that will increase the need for new schools and place further pressure on STATE AND school district budgets; and

WHEREAS prudent stewardship of state resources requires that every effort be made to get the best value for each state dollar spent; and

WHEREAS use of prototype school designs has enabled the Municipality of Anchorage, Fairbanks North Star Borough, Kenai Peninsula Borough, and Matanuska-Susitna Borough school districts to more quickly ~~and economically~~ respond to their district's need for

COPIES of this resolution shall be sent to Shirley J. Holloway, commissioner of education, to the Alaska State Board of Education, and to the school board of each school district.

Alaska Department of Education

Prototype School Design – HCR 24

This bill deals with prototypical designs for schools. Currently, school designs are the responsibility of each local school district. There are some districts in Alaska who have made good use of prototypical designs and this use may have resulted in some cost savings in the construction costs of the schools using these designs. In looking at the use of prototypical designs and their possible use as a means of controlling costs of school construction attention has been focused on the use of prototypical designs in Anchorage and Fairbanks. It is useful to note that implementation of prototypical design in these areas has been limited to elementary schools. The use of prototypical designs has been successful in these areas for several reasons. These include:

- Similar site conditions (i.e.. topography, soils, climate)
- Facilities are being used under the same educational program
- The same contractor group bid the jobs, utilizing an experienced labor pool
- Staff and community input was limited due to previous acceptance of the design

If the primary motivation for developing and using a prototype (or, series of prototypes) in the state, part of the investigation should consider all aspects of the costs which would accrue to prototype use. This should include a review of the problems associated with state use of a stock plan implemented in the 1970's in rural Alaska.

This bill considers two requirements:

1. "that the Department of Education is requested to develop a prototype school designs for core school functions that could be used by school districts; and
2. "that the Department of Education is requested to develop incentives for school districts to use prototype school designs in school construction funded through the educational facilities maintenance and construction fund (AS 37.05.560).

These two requirements offer several challenges. The challenges involve issues the breadth of the scope desired by the legislature and what is meant by "core school functions".

The request to develop "...a prototype designs for core school functions..." appears to focus on a concept presented in a department briefing paper on prototypes presented to the Bond Reimbursement and Grant Review Committee. The paper discusses the conditions where prototypes have been successful and suggests that use of prototypical components might be appropriate for Alaska. If a prototype design is to be developed, there are several factors which might effect the successful use of the design. Two of these are:

- There are at least three major climatic regions of the state, southeast, central and arctic, which require unique design considerations.
- There are also varying size requirements required by schools districts around the state. These vary from the 600 student elementaries being built in Anchorage and Fairbanks to the 25

Alaska Department of Education

student K-12 school needed in Healy Lake. The size requirements could be considered in terms of a series of ranges (e.g., 0-50, 51-250, 250-500, and 500 and over). However, this still leaves a large number of design options to be considered when coupled with the three climatic regions.

- Is the project a new totally new project, or is it an addition to an existing school?

Just these three factors begin to frame the challenges of designing a single prototype to be used across the state. The concept becomes more feasible when considering that the Deferred Maintenance Task Force may have been suggesting use of prototypical components. If the concept is applied to the "core school functions" specified in this Resolution, components could be identified, e.g., mechanical room, office/teacher preparation areas, multipurpose rooms, library/multi-media center/computer lab areas. These could then be configured and sized for population ranges similar to those noted earlier in this discussion.

The second requirement of the Resolution is a request to develop incentives for districts to use prototype school designs. The types of incentives to be developed are not specified and could range from point awards, which might effect the priority of projects ranked by the department to financial incentives. Certainly any incentives developed would need to be applied equally to all districts. The challenge in developing these incentives is in first assuring that the concept of prototype use is applicable to all districts. If, as has been suggested in several nationally published papers, prototypes only work well in a homogeneous environment of moderate to high growth, then they may only work in the three large districts in Alaska: Anchorage, Fairbanks, and Mat-Su.

As the concept of using prototypical components is explored, the design of each component will need to include the flexibility to support a variety of configurations. This will allow designs to adapt to meet the demands presented by the site, wind driven rain or drifting snow, and unique programmatic demands.

The requirement to develop incentives is dependent upon how the issue of prototypes is developed. Design development costs for total prototypical schools could vary depending on the number of factors considered.

Further development of the range options and application for an Alaskan prototype will allow definition of the potential costs.

MEMORANDUM

State of Alaska
Department of Education

To: House Finance

Date: February 16, 1998

Phone: 465-1858

From: Michael Morgan,
Facilities Manager
ESS/Facilities Support

Subject: **Prototypes**
HCR 24

The Bond Reimbursement and Grant Review Committee is convened by statute (AS 14.11.014) and is given as one of its duties a charge to: "...analyze existing prototypical designs for school construction projects..." (AS 14.11.014 (b)(4)). The attached briefing paper was prepared by the department and was presented to the Committee for consideration at their December 3, 1997 meeting.

Submitted for background information, this paper frames issues surrounding the use of prototypical designs and results of research on the subject.

State of Alaska **Department of Education** ***School Finance/ Facilities***

By: Facilities Staff **Date:** December 3, 1997

Phone: 465-6906 **File:** g:\br_grcom\papers\prototyp

For: BR&GR Committee **Subject:** Prototype Schools

BRIEFING PAPER

Background

As part of the legislation enabling this committee, one of the specific charges specified was for the committee to "analyze existing prototypical designs for school construction projects"(AS 14.11.014(4)). This paper looks at the issue of use of prototypical designs from a generic perspective, addresses their possible use from a state perspective and provides a recommended policy statement for the department to implement.

Department staff is currently analyzing two existing prototypical designs in current use.

Discussion

One of the items for review and study established by statute for the Committee is the use of prototype school designs in Alaska.

A dictionary definition of prototype is, "the first thing...of it's kind model." This of course differs from the common application of the term to mean stock pl or "off the shelf" design.

Considerable literature exists on the subject of prototypes in relation to schools, including seminars at the 1995 CEFPI conference in Scottsdale. Various experiments using prototypes in school districts in Alaska have been tried with varying degrees of success.

Some surveys have been made of school districts and state Departments of Education regarding "stock plans." The Georgia legislature, after a survey of other states, (a copy of the Georgia study is available), recently rejected their use. Of the states contacted, 41 responded. Three states used stock plans, three rejected them, nine did feasibility studies regarding use and rejected them, nine built a total of 39 schools from stock plans and would not do so again. Maine built 49 very small schools from stock plans but would not do so again, based on programmatic limits and liability problems. California rejected the use of prototypes based upon staff costs to modify and update plans, comply with codes, adapt to site conditions and, because of the lack of local involvement in the design process.

Prototypes have been used more successfully in the following four ways:

1. As simple planning tools, examples of successful solutions to similar programmatic, space, construction type, and site orientation.
2. As basic component designs and details, specifications and planning options that could be put together like "Lincoln Logs."
3. Full contract documents which could be modified for special conditions.
4. And of course, the "off the shelf" set of contract documents or cookie cutter plans.

One speaker at the CEFPI conference listed 'types' of prototypes as:

A. Typical 'Type':
   A single district having a school designed for a specific location but developed for reuse in other locations. The district does a post occupancy evaluation and has the plans modified to correct items in the evaluation and adjusted to a new site. Suggestion was that a new prototype might be revised every 3-4 years. This might be applicable to a larger and growing district and could save a small amount of fee; considerable repetition of administrative staff time and some construction cost savings, if enough project s were built in a short period of time.
B. By default 'Type':
   One school built, or building, and "hurry up we need another" therefore, adjust the design we have for site and utilities and bid again.
C. Henry Ford production line 'Type':
   For a variety of very fast growing districts, as in Florida where a district might need several high schools and 6-8 elementary schools a year, there could be fee savings, time saving, and no time to incorporate large amounts of local input.
D. Copy cat 'Type':
   A smaller district sees a school on another district and buys the plans from the architect with only site modifications.

Another speaker emphasized the concern of teachers, and administrators that prototypes usually did not allow for input by the real users and typically do not allow for the sense of ownership by the community. He emphasized the concern for response to varying educational program needs, code deficiencies, liability and any real reduction of cost.

A type of prototype only alluded to at the conference, but increasingly available through the computerization of the drafting process is the development of prototype components. These can vary from cabinet details, to classrooms, toilet room and kitchen components, to total core units with multiple classroom possibilities, as well as varying construction details.

Generally cited advantages for the use of prototypes are fee cost savings, decrease in the amount of time to be bid ready, and possibly reduced construction costs. Of these most of the educators played down the actual cost savings as usually being small in comparison to total project cost. Time saving to be bid ready was usually realized although in slower growing districts and where older schools were being replaced this was not an advantage.

Almost uniformly speakers agreed that the disadvantage of prototypes was the missing response to differing educational programming, to local community input and to the sense of being "our school." Also the need to make revisions for code changes and site conditions sometimes made the prototype an inappropriate solution.

The use of prototype school design in Alaska has not been surveyed in detail. A few districts responded to an initial request for information. Anchorage, Fairbanks, Mat-Su and Kenai have all used prototypes with varying success to deal with the requirements mandated by a rapidly growing student population. The districts with smaller schools have not had such rapid growth although it is in those districts that the BIA used stock plans and after the Molly Hootch case DOTPF promoted prototype concept designs, though in many cases these weren't implemented. Recently, one rural district, replacing BIA stock plan schools has used prototype components with considerable success.

After considering the positive and negative factors associated with the use of prototypical school designs, one conclusion which can be drawn is that creation, selection and successful use of a single, complete set of stock school plans for the entire state of Alaska is not feasible.

<u>Recommendation</u>

1. It is recommended that the attached policy be reviewed by the committee.

2. Staff will complete a the review of existing Alaskan prototype designs, as mandated in the committee defining statute, for consideration before advancing a final policy.

ALASKA STATE LEGISLATURE

Rep. Eldon Mulder, Co-Chair
Rep. Kim Elton
Rep. Richard Foster
Rep. Jeannette James
Rep. Beverly Masek
Rep. Gail Phillips

Sen. Tim Kelly, Co-Chair
Sen. Loren Leman
Sen. Georgianna Lincoln
Sen. Robin Taylor
Sen. Gary Wilken
Sen. Mike Miller

DEFERRED MAINTENANCE TASK FORCE

Capitol Building, Room 501 • Juneau, Alaska 99801 • Phone (907) 465-2647 • FAX (907) 465-3518

Sponsor Statement

House Concurrent Resolution 24

State Affairs Committee Substitute

Use of Prototypical Designed Schools

The Deferred Maintenance Task Force received testimony on the cost savings and operational advantages of prototypical schools. Several communities use them today. The Task Force found that the savings in design cost and the ease of maintaining several identical physical plants offered the opportunity to fund more schools as the savings are achieved.

One rural school district has expresses great interest in using a prototype for schools in its district. They are currently in discussions with the Fairbanks School District to learn from the Fairbanks experience.

This resolution requests the Department of Education to develop prototype schools and incentives for districts to use them. The Department of Education is requested to report to the legislature by March 1, 1998 any statutory changes that may be needed to accomplish this goal.

The State Affairs Committee Substitute speaks to several concerns that have been expressed and made several technical corrections.

Page 1 line 6

replaced "critical" with "crucial"

Page 2 Lines 2 through 7

These lines were added at the suggestion of representatives of the Fairbanks North Star Borough School District. They refer to the success of prototype designs in reducing maintenance costs and reducing first year operational problems with new schools.

Page 2 lines 8 through 10

notes that designs need to reflect the unique environments found in Alaska

Page 2 line 15
specifies that the development of prototype designs is for elementary

Page 2 lines 15 through 18
adds consultation with architects, engineers, and professional organizations familiar with Alaskan climactic conditions and its effect on school design

Page 2 line 20
directs the Department of Education consult with the bond reimbursement and grant review committee

Page 2 lines 24 through 27
adds a resolve to request that the Dept. of Education identify prototype components when a prototype design might not be appropriate.