

Stretching CONSTRUCTION Dollars

How to avoid poor planning and make the most of your district's building budget

By Kelley D. Carey

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aste has been built into many school construction projects before design work even begins—the designers and builders just make a reality out of faulty planning. It's what I call the spiral of

insanity, and it results in enormous waste of scarce construction dollars.

As a planner, I regularly urge school boards to remember these two definitions of insanity:

1. Insanity is proceeding logically upon a completely absurd premise. Example: You worry about getting the best price for doors when the building addition was a poor idea.

2. Insanity is repeating the same procedure expecting a different result. Example: An old school wears out. You fix it a bit. It wears out. You fix it some more. It wears out. Now the costs for fixing it are huge, but you fix it again anyway.

The downward spiral of poor planning

If your district has an outstanding maintenance program, including preventive maintenance and replacement plans as old schools reach the end of their useful lives, you've earned an A.

If your maintenance staff is barely keeping up and complains about lack of funding and the need for renovation, give yourself a C.

But if your schools are in disrepair and additions and renovations to old schools have sapped your budget so you can't afford to build needed new schools, your grade is F.

Problems like these land in the lap of school boards who have not asked the right questions and demanded the right re-

sults. They think the superintendent will take care of everything. They see no need for real involvement in the process of making decisions about construction spending. Or they are dissuaded from being involved.

The result is a three-stage downward spiral.

Spiral stage 1: Poor maintenance budgets. Neglected maintenance leads to accumulating renovation needs. You might think that school maintenance budgets do not have to be increased each year for buildings to be well maintained. But inflation has increased by an average of 3 percent per year recently. If you don't budget 3 percent more for paint next year, you will have to buy 3 percent less paint. The same goes for roofs, carpets, air conditioners, and the like—and it assumes your district is spending enough to start with on repairs and preventive maintenance.

How does your maintenance budget stack up against suggested standards? How much is spent at each school annually compared to documented needs? Do you even have a report documenting needs, estimating costs, and setting priorities?

Most school boards don't have the answers to these questions. And most haven't requested the necessary information.

Spiral stage 2: Hurried renovation decisions. Putting off maintenance means it will take large renovation projects to keep a building sound. And here's where the downward spiral gets worse: Decisions to renovate are usually based on incomplete building surveys and failure to consider the life-cycle costs of the building parts.

Life-cycle costing involves examining each building system of an old school to see where it stands in terms of its life expectancy and converting that to an equivalent value for making future repairs. Those future costs can be converted to

School design can be cost-effective as well as environmentally sensitive. At the Roy Lee Walker Elementary School in McKinney, Texas, solar panels and a windmill supplement traditional, more costly energy sources.



present value by standard formulas and then added to the costs for renovations needed at present.

For example, a building survey may show that the roof does not leak. But, the roofing material used has an expected useful life of 20 years. It is now 10 years old, so it will be a probable candidate for replacement in a decade. If it will cost \$400,000 to replace the roof in 10 years, consult the interest rate tables to find the present value of that future expenditure and add it to your building renovation ledger. If you ignore the life cycle, which is common, you may severely understate renovation needs and make the school's condition look better on the books than it really is.

Consider the impact of partial renovation and disregard of life-cycle costs. Spend \$15 million renovating a 1920s high school, and in 10 years, you will have a building that is more than 90 years old and needs a lot more work. What's more, districts often renovate buildings piecemeal, so they never get a handle on what that building is really costing. The long-range view is lacking. Putting money into an old school doesn't make sense unless you put in enough to turn it into a truly modern building.

Spiral stage 3: Building addition decisions. Continued renovation of old schools usually means building additions to accommodate some of the major features and spaces found in new schools. Adding these spaces often takes up the playground on typically small sites. How many times have you seen a really old school with a series of additions added over the years, a winding labyrinth of poor organization?

Then there is the inevitable sentimental voice of people who went to the school long ago and want to keep it. Of course, they don't have to attend the school. Keeping old schools well

past their prime is not to be confused with historical preservation. The issue is not whether to save historic buildings, for that is a commendable concern that I fully support. The issue is whether a given building:

1. Is truly of architectural merit;
2. Can be renovated cost-effectively;
3. Will, after renovations, afford a learning environment comparable to that in a new school; and
4. Should be renovated as a public school or sold for private development that can find a market to support the renovations required.

A rule of thumb is that a building should not be renovated if the true costs of renovation—including life-cycle costs—amount to more than half the price of a new building. When that's the case, you're better off building a new school. Fixing the old one makes no sense financially, and keeping it going is probably not fair to the students who go to school there.

Another concern is equity. Surveys show that for every \$1 spent renewing old schools, about \$4 is spent for new buildings. Most of the old buildings are downtown, where minority students tend to be concentrated, and the new buildings are in the suburbs, where the students are more likely to be white. The minority students get the old buildings that the white students left generations ago, and even with renovation, the old schools don't always have the large media centers and other special facilities that the new ones have.

Unfortunately, the downward spiral of poor school planning is usually followed by sporadic repair crusades. The huge bond issues involved soak up scarce funds through interest charges, attorneys, and bond companies. Big facilities programs flood the construction market, running up building costs, and big in-

creases in property taxes follow.

When will we realize that we get only a few cents back for every dollar spent propping up old schools? Even if equity were not a factor, the way we plan schools makes no sense financially. It's up to school board members to demand a better planning process and to take an active role in that process.

Why planning matters

Construction funds are limited, so you have two options: Make some quick decisions and see how they pan out, or plan for the long range and make your dollars go a lot farther.

Comprehensive planning for facilities is a simple process, but it requires expertise and training. A laundry list of projects is not a planning process. In one federal court case where I was an expert witness, the district argued that it had a plan, but no documents could be found. A week into the trial, district officials came up with two photos of a chalkboard showing some lists of projects and scribbled maps. Both pictures were of the same board, they argued, because one showed the right arm of a man in a plaid jacket and the other showed his left arm. That was their planning process.

Some people don't want a planning process. They want the

projects on that laundry list to be built, even if the list was based on bad assumptions, even if there is no documentation of any planning process. And that's a shame, for the absence of good planning can mean getting just pennies worth of benefits out of every dollar spent. Not all bad decisions are as obvious as planning to build a school on a hazardous waste site. Bad plans often are an agglomeration of poor small decisions that add up to a real misallocation of scarce funds. Good planning stretches scarce dollars through a process that tells us exactly where to target our expenses.

Steps to good planning

School planning should cover programs, demographics, and facilities. Change one side of this planning triangle, and you affect the others. For example, a program change to smaller class size will require more facilities and student reassignment. A change in student demographics means rezoning and facilities changes.

Good planning is a four-step process:

Step 1: Require sound base data. Get off to a bad start, and a bad finish is guaranteed. A building program can be completely at odds with what the data shows are critical needs.

Warning signs

Is your school district headed down the bad-planning spiral? Heed these warning signs:

- Your board does not require comprehensive five-year plans for programs, demographics, and facilities.
- You do not get annual written reports on your facilities needs, costs, student demographics and trends, use of classrooms, and comparative data on schools.
- The staff does not give you an annual report on school-by-school maintenance expenditures each year, showing budget per square foot, comparing budgets to building ages, and listing major work done.
- No study shows the total operations and maintenance costs, per student, for each school and needed renovation costs.
- No current facilities audit shows how every classroom in your district is being used, compared with the uses the rooms were designed for. Inefficient use of existing spaces is a leading cause of the need for more classrooms.
- No organized planning team of staff specialists in programs, student assignment, and facilities actually takes part in planning.
- You have not seen maps plotting where all the students live by address and showing attendance boundaries that are used for construction decisions.
- Your board puts expendables, such as computer hardware and software, into long-term construction bond issues—materials that will be obsolete before they are half paid for.
- You are not provided written reports on five-year enroll-

ment trends and projections for each school, in the context of that school's enrollment capacity.

- The superintendent is in a rush to get a building program going, saying that the needs are obvious.
 - Your district facilities construction program is a list of projects handed out by the superintendent.
 - No board committee is charged with bringing together concerns about comprehensive planning.
 - No independent planner is developing construction plans with your team. Instead, the architects who will design the schools recommend the projects to your superintendent.
 - The first concern about a construction project is not the process, but how much money is available.
 - If you have a planning report, it generalizes about growth and needs and then skips to a list of projects.
 - Equity for all students is not a listed objective that must be achieved in your planning for schools.
 - Your district typically undertakes huge building programs and then goes for years without new schools and major renovations because it is so in debt.
 - Your district adds on to old schools again and again, making it difficult to ever close them down.
 - You turn old schools into district offices or storage places or alternative schools instead of selling them and getting rid of their high overhead costs.
 - Your district spreads renovation money around so thinly that buildings are only partially renovated each time.
 - Your district uses the same architects over and over.
- There is no formal screening process, nor do you have a part in a selection process other than voting.—K.D.C.

When that happens, it's a good bet that someone had projects in mind already.

It is not unusual to see a report with a few pages showing that a county is growing. All those graphs and pictures seem informative, but they actually give just a general picture of a large area. Then the report takes a leap in logic and calls for huge construction programs here and there around the district, describing the projects in detail, along with cost data and construction schedules. There is no process that bridges from the broad generalities to why these particular projects should be built. Often, it turns out that the report was driven by preconceived answers instead of a planning process.

If base data about programs, student demographics, and facilities is not collected, refined, and used to drive the planning process, you are very likely putting a dollar into your building budget and getting pennies back in results. Facilities, programs, and student assignment are usually controlled by different departments in the district. All of these departments have to be involved in data collection and analysis, and they have to work together as a planning team.

People talk teamwork, but they naturally hoard data. Comprehensive planning says, "Let's work together. If we are going to spend millions on schools, we want to know how those dollars are being used and what program changes might mean for space needs in the future. If we are to build a new school, we want to know what students will attend it now and in five years."

For your last construction program, did you receive a report with base data on programs, student demographics, and facilities? Did the report show how these sides of the planning triangle were considered together to arrive at objectives? Is that data kept current? Did your report show how that data drove the building program decisions?

Step 2: Outline objectives. Once you have good base data, use it to define the objectives of the plan, combining data with policies to identify the gap between where you are and where you want to be. An objective might be to eliminate all portable classrooms, or to include music and art rooms in all elementary schools, or to have a certain number of students per classroom.

Some objectives may need to be redefined or even abandoned if they are found to be too costly. And new program objectives may arise because the data highlights new policy needs, for example, or points up glaring inequities among schools. In all cases, objectives will, to a greater or lesser extent, affect each side of the planning triangle.

Did your last building program outline objectives that were built on base data and open discussion?

Step 3: Develop alternate ways to achieve objectives. OK, now you have good base data about programs, demographics, and facilities. You've dreamed dreams about programs, you've seen what needs to be fixed, and you've arrived at some plan objectives. What about alternative solutions? Anyone who tells you there is only one answer to a building need has an agenda—and just might be hoping to benefit from the

Resources

Kelley D. Carey has written numerous articles for *American School Board Journal* and *ASBJ's* school facilities annual *Learning By Design*. All of these articles are available on the resources page of the *LBD* website, www.asbj.com/lbd/2003/resources.html.

- "Before You Dig," *ASBJ*, October 1999.
- "Best-Laid Plans," *ASBJ*, October 2001.
- "Building within Budget," *School Spending*, a supplement to *ASBJ*, 2000.
- "Designing for Students' Needs," *LBD*, 2003.
- "Hearing the Public Voice," *LBD*, 2001.
- "Renovate or Replace?" *ASBJ*, October 2000.
- "Selecting an Architect," *ASBJ*, August 2000.

proposed course of action. Alternatives must be developed to find out what is the best answer in every case. There is never only one solution; even doing nothing is always an option.

In one case, my client had five small elementary schools scattered around the county, four of which needed complete renovation. The district was under a court order for desegregation, but rezoning to desegregate would mean students passing each other on the roads. My recommendation was to close all five schools after building one central new school. The savings in operating costs, salaries, and renovations avoided took care of the payments on the money borrowed to build the new school. Building a great new school when they had no money in a construction fund meant a great deal to this district, which was in receivership for being almost bankrupt. But, applying savings to pay for new construction ought to interest any school district. That's looking at all three sides of the planning triangle.

Simply put, until you are offered more than one solution or package of solutions to review, you have no way of knowing that the least-cost plan is in the works. By "least cost," I mean the least cost for all types of costs, from construction options to travel times, flexibility for the future, equity to all kids, time schedule, chance for errors, and other factors peculiar to the planning process.

Cost-effective means least cost for all the known concerns for right now and five years from now as demographics shift, buildings age, and programs develop. Sure, you can put a new roof on that school right now more cheaply than building a new school. But, if the rezoning and aging of that building will mean it should be closed in a few years (and I have seen many cases of money wasted like this), then is it smart to spend that \$250,000 now on a roof that will go to the dump sooner rather than later?

If your planning document does not review the cost-effectiveness of various combinations of solutions, then it does not represent a sound planning process. The proposed building program may make sense. You really have no way of knowing,

though, unless the idea is evaluated in the light of other solutions. After all, any construction proposal means taking a lot of money out of the planning pot. That means something else will be postponed or abandoned.

So, each proposal must be tested in the triangle of programs, demographics, and facilities. Look at all the needs your base data has identified and develop alternative solutions to the problems across the entire district. Look at alternate student assignment plans, consolidations, additions, closures, and new construction. Examine current facilities use. Why can one principal house 100 more students than another in a building of the same design? Look at the housing of all programs, including special education and Title I, which are often stepchildren when it comes to room assignments. How does each alternative stack up in terms of equity?

Step 4: Set program priorities. Amazingly, some superintendents will start a planning process by announcing their priorities for construction before collecting data and defining objectives. Superintendents are not trained in comprehensive planning for facilities and student assignment. So your board must tell the superintendent to hold off on the priorities until the planning team has collected base data, set program objectives, developed reasonable alternatives to meet those objectives, and estimated the costs for each alternative plan.

A number of factors go into setting priorities. One is a sense of fairness to all students. Another is putting need before politics. And another is matching projects to program objectives and selecting those that most effectively meet the objectives of the highest concern.

A long-range comprehensive plan sets the framework for your building program. Many priorities will not make it into the

program because other items meet the objectives better or because of their cost. This is the time to consider the district's cash flow, the funding sources, and the sheer size of the first stage of the construction program. Dumping a lot of construction on the market at once can result in a seller's market for the building trades, raising costs enormously.

Poor coordination of your construction with other local demands will make this situation worse. Ask yourself: Does your district look at local construction projects apart from schools before putting huge projects out for bids? Do you phase construction projects to reflect seasonal changes in costs and even out the demand over several years, instead of putting several projects out for bids at the same time? Are construction periods for projects realistically long enough to avoid paying premium costs to hurry the pace, when the need to rush comes from waiting too long to decide in the first place?

In short, the best use of construction dollars involves a whole series of considerations: equity in providing new schools, maintenance to avoid wasteful renovations, realistic maintenance budgets, a long-range view that avoids short-range decisions, and good base data. It involves a structured process that takes advantage of staff expertise in programs, demographics, and facilities and involves the public. And it requires an open planning process in which informed board members are empowered to make sound decisions.

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Guarding construction dollars

- Have an independent planner work with your district to help develop your construction program. Some architects offer planning advice, but that may be a conflict of interest, as they wish to have a design contract as well. Your planner should have no financial interest in the outcome.

- Require a comprehensive planning process that is well documented.

- Have a comprehensive planning team that includes regular involvement by senior staff responsible for programs, student assignment, and facilities, with input from other experts, such as transportation and law.

- Start your plan with a complete survey of all school buildings, specifying the cost of renovation necessary to bring them up to standard.

- Outline objectives for programs, demographics, and facilities in relation to the baseline data you have gathered.

- Document a process of deliberation to assess alternative ways to meet objectives.

- Hold workshops to involve the board and the public as

the plan develops, starting at the data-gathering stage to determine possible needs.

- Design student-assignment plans for alternative construction proposals, including changes in attendance zones and transition plans for such situations as moving rising seniors from one school to a new one.

- Create a citizen oversight committee with a clear charge, regular meetings, and broad representation (not handpicked by the administration). Give the committee meaningful work to do in reviewing the construction process and expenditures.

- Assign a qualified expert to take charge of the whole program. This can be a single in-house specialist or outside consultant; it need not be a high-powered and high-cost consulting firm.

- Develop a clear and public architect-selection process that considers the architect's experience, record of cost control and change orders, ability to work with the staff, and the like. Using the same firm over and over can result in standard designs. There should be a screening process for each project, and the board should participate.—K.D.C.