Why are school construction costs so low?

■ *Labor productivity is up and risks have diminished. Districts can save the difference or spend some of it to improve their projects.*

By CHRIS COLE
—
Meng Analysis

Studio Meng Strazzara recently completed design and bidding on three projects for the Northshore School District. All the bids were constructed during this favorable bid climate.

The projects, which included a new transportation center, Woodinville High School and the Secondary Academy for Success, all bid 20 percent to 25 percent less than what they would have cost a year earlier. What does this really mean?

It is old news that construction costs have fallen considerably, and nobody needs to read another article stating that fact. So what exactly costs so much less, and why?

Whatever you have heard about China or the price of copper, you should put these and other commodity-oriented factors in a category somewhere in between "minor details" and "red herring" for the time being. Labor productivity and risk are the primary contributors to the bidding climate that we are experiencing today. These elements are very much intertwined.

Productivity

Unfortunately for many, our labor market has fallen with the overall economy, and construction craft workers have been hit hard.

As in other industries the layoffs that have taken place, while sad, have left us with a more productive construction workforce. In some trades, we can document productivity increases of 20 percent to 30 percent from projects that require total cost substantiation as part of the invoicing process and from "open book" pricing, which is required for some of our general contractor/construction manager projects.

But labor rates have increased, which offsets much of these savings, right? Wrong.

The labor rate that matters is not the prevailing wage for a particular craft or a union agreement, which spells out wage and fringe benefits cost for a journeyman craft worker. Yes, those have gone up, but this increase does not equate to the hourly labor cost on your project.

What matters is the "blended" crew rate.

What is a blended rate? It is the average rate paid to the crew for a specific trade or project.

Two years ago the crew rate included a much higher ratio of foreman and general foreman wage earners. At times the ratio could be as high as one foreman to one journeyman.

This was viewed as necessary at the time to maintain your crews. Today, we see crews that include much higher ratios of journeyman and apprentice workers, with the corresponding lower hourly rates factoring into the blended rate.

The result of this is a "blended" labor rate, which is more or less unchanged from two years ago.

Risk

The average self-performing construction contractor's labor risk has dropped dramatically, and labor is the biggest area of risk that a trade contractor has.

Clarity of design documents, materials price volatility, schedule, logistics and other things all factor into the perceived risk, but not anywhere near as much as labor. How contractors analyze and manage risk separates the profitable ones from the rest. It also affects the bids that you are seeing today.

Today, most trade contractors can count on the following:

- highly productive craft workers with known abilities;
- enough experienced workers to staff the project;
- few, if any, of these workers leaving in the middle of the project; and
- journeyman wages for journeyman labor tasks.

Margin

We all know that in order to win a project these days you usually have to keep your margin very low. Less well known is that margin is directly related to risk, and in some cases it is interchangeable.

Several years ago I was a project manager for a large mechanical contractor. The company did not refer to "margin" on its internal bid forms. Instead, we had a line called "coverage," which meant, "How far above my estimated cost can I go before I actually lose money on the job?"

Coverage of risk concerned the firm more than trying to make a killing. That number could be 10 percent or it could be 40 percent.

If my risk is less, then I don't need as much coverage. Add this to increased labor productivity, higher certainty that I can achieve my productivity goals, and the fact that I must take some risk if I am to be competitive, and you have de-escalation.

Decreased materials prices have not hurt either, but don't be fooled about where the real money is.

Taking advantage

Now that we know why buildings cost less, what are we going to do with this information and how do we benefit from it?

One option is to bank the savings. Informed cost-estimating efforts should produce estimates that reflect today's bid climate, and the owner might choose to reduce the budget.

Another option is to use the savings to add sustainability features or to add features that pay back over time, such as condensing boilers or solar panels. This is a popular choice.

A third option is to use some of the savings to add quality and functionality.

For Woodinville High School, Studio Meng Strazzara worked with the Northshore School District to develop a concept with high ceilings and generous glazing in the food service space. The initial design objective was to create a commons area able to support various activities in addition to serving as the cafeteria.

The design was continually reviewed for cost. An alternative design with lower ceilings was developed that, though less expensive, would not have supported as many uses. As it became apparent in 2008 that the bid climate was becoming friendlier to the district, the value of the original concept was reinforced.

Now completed, the students and staff have embraced the space as the new center of the campus. In its first year, the commons was used for events such as dances, presentations, school concerts, club meetings and alternate curricular space.

The construction cost was slightly higher than what might have been achieved by banking the savings, but a collaborative,

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The Northshore School District took advantage of lower construction costs when it built a student commons at Woodinville High School with high ceilings and generous glazing. The commons serves as a cafeteria and a meeting and activity space.

Photo by Steve Keating, courtesy of Studio Meng Strazzara

Headaches

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covers the suburbs east of Lake Washington, is in the midst of modernization and new school construction as it faces a growing population that will add the equivalent of one new elementary school, or 425 students, to its population every year for the next five years.

The district has come up with creative ideas for a modernization of Finn Hill Junior High in Kirkland, which is adjacent to an expansive high-functioning wetland within Big Finn Hill Park. Their low-impact development approach both saves site development costs and embraces constraints as a learning opportunity. The district is demolishing the 43-year-old school and constructing a new building on its 19-acre campus.

Stricter regulations for wetlands and stormwater management required more stormwater infrastructure than anticipated. By incorporating a large rain garden, which uses planted depressions to absorb rainwater runoff from impervious surfaces, the district was able to downsize its stormwater system for the new buildings and parking lots.

A series of smaller rain gardens featuring different Pacific Northwest habitats is oriented to each grouping of classrooms, or educational pod. Paths will link an outdoor patio for each pod with its rain garden, incorporating interpretive signage.

Rain gardens

Rain gardens, which some studies show can cut down on the amount of pollution reaching creeks and streams by up to 30 percent, have become such popular Parent-Teacher-Student Association projects at Seattle Public Schools that the district is looking at setting design standards for them, according to Gretchen DeDecker, the district's self-help projects coordinator.

"All of a sudden we have had a flood of interest in rain gardens," she says, noting that at least 10 school sites in the district have active parent-teacher-student rain garden projects that will absorb and filter water instead of discharging it directly into concrete stormwater systems.

Some of these projects are funded by bake sales, others by grants. Children and parents do some of the excavating and all the native plantings. Wedgwood Elementary's new rain garden will absorb all the runoff from a double portable classroom.

"We have a lot of kids who are getting a good understanding and access to water issues in the Seattle area. And it is good because this is a critical issue for our region," says DeDecker.

The new Glacier Peak High School site in Snohomish also makes extensive use of rain gardens and bioswales throughout the site, and particularly for runoff from its 580-car and 25-bus parking lot. Principal Dean is particularly proud of how this system is teaching students about the impact all the asphalt is having on water quality and how vegetation controls impacts.

For biology teacher Brian Hill at Glacier Peak, it's all about getting students to look at the natural world around them.

"There's nothing like sending them out to get samples from our pond so that they can look at what's in the water under a microscope. It's just cool," Hill says.

Nancy Way is vice president of The Watershed Co., a Kirkland environmental consulting company with services in landscape architecture, stream, wetland, shoreline and wildlife assessment, planning and permitting.

Developer

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can deliver superior design more efficiently and at great cost savings.

The situation for school districts and many municipalities is the same — they have many obligations and pressing demands and increasingly limited resources. Neither is an expert at constructing buildings and both can greatly benefit from a financing model that allows them to leverage the skills and know-how of the private sector.

Ultimately, such an arrangement could help us build and restore better school structures in less time for less money.

John Finke is the senior regional director of the National Development Council, a New York City-based nonprofit organization that has overseen close to 20 63-20 projects in Washington state.

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information-based evaluation of the architect's design resulted in a facility with higher functionality.

From an owner's standpoint, it's a great time to build projects. You'll benefit most from today's bid climate by making fully informed decisions. See that any proposal to spend or bank savings is backed up with detailed information about life-cycle cost and user benefits.

Chris Cole is a certified estimating professional, LEED Accredited Professional and associate value specialist at Meng Analysis, a sister company of Studio Meng Strazzara.

Skills center

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the veterinary technology program, and DigiPen Institute of Technology, industry partner for both the computer science and sustainable technology programs.

Numerous other business and industry partners have collaborated extensively on all aspects of the academy project, and will continue to play a vital role in the ongoing implementation and development of the curriculum. This involvement ensures the academy will continue to produce highly trained students with employable skills.

Green Weave

A final feature of both academy campuses is the focus on "Green Weave" curriculum, and the use of stainable/renewable project materials and technology.

Both sites use photovoltaic panels, with the marine technology site incorporating geothermal technology. Each site will also have an interactive touch screen panel located for easy student and community access. The panels will display current energy conservation/use for both sites with just a touch of an icon.

Green Weave is the academy's way of integrating sustainable and renewable practices directly into the everyday curriculum. Students will be able to see the buildings' inner workings, from composting to basic recycling. They will be challenged to rethink current professional practices and to reduce waste in every area, making each program function as sustainably as possible.

After years of planning, the academy has now become a built reality. The consortium of six Skagit County school districts, Skagit Valley College, the Port of Anacortes and regional industry partners from across the Puget Sound has made these buildings possible.

This September, students will be the first class to experience this evolutionary departure from the traditional instruction model. Together, they have created an academy that will unite students from different corners of the county into a central location for one common goal: to prepare academically and professionally for the careers that lie ahead.

Kevin Oremus, a principal at Hutteball & Oremus Architecture in Kirkland, has planned and designed educational facilities across the Pacific Northwest for nearly 25 years.