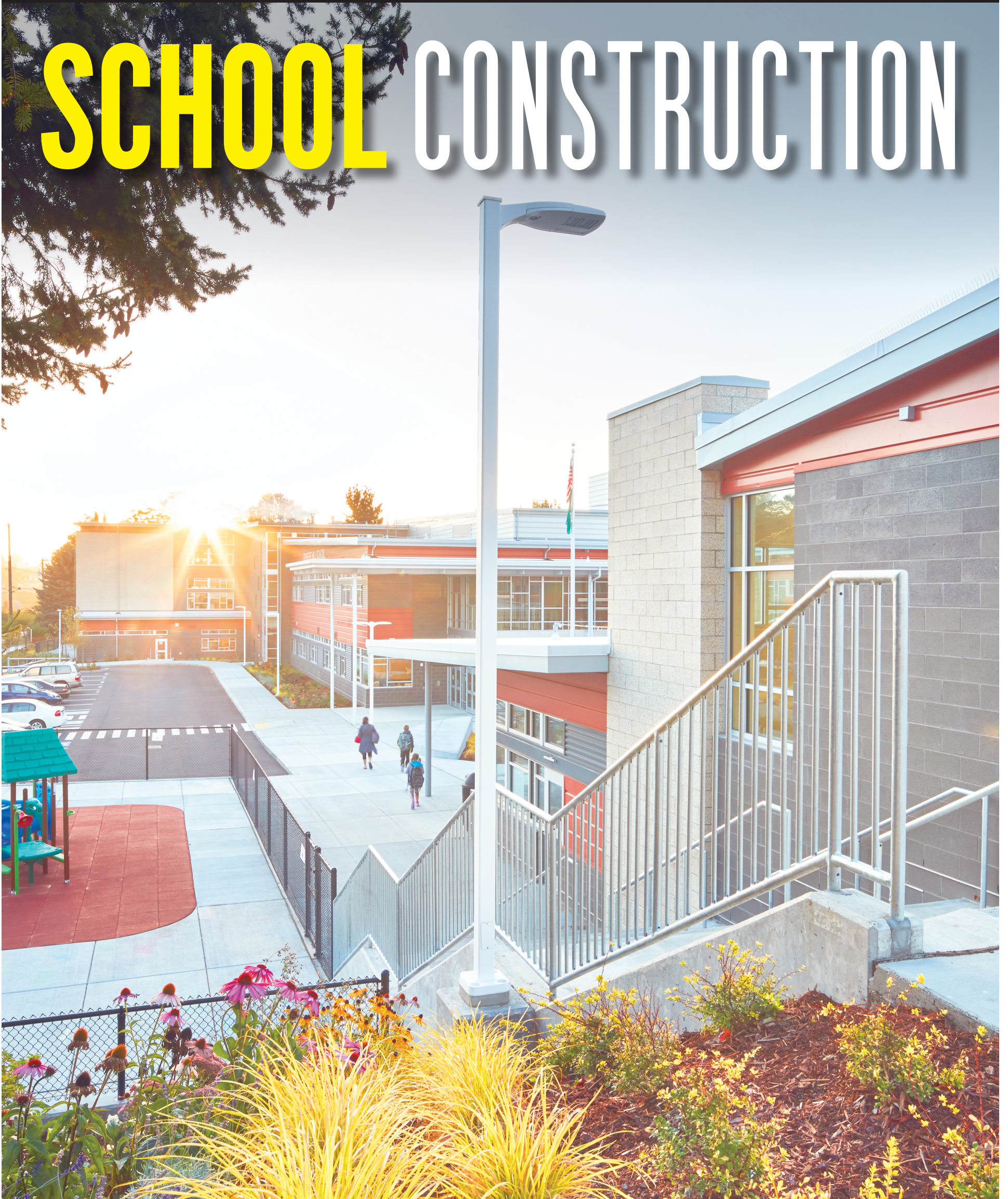


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SCHOOL CONSTRUCTION



STRETCH YOUR TIGHT BUDGET BY GETTING CREATIVE

When funding falls short, districts can turn to a number of useful strategies to get back on track.

In our unprecedented regional construction boom, local market conditions stress every construction budget — and public schools are no exception.

General contractors have little control over the exaggerated market forces we're currently seeing, but experienced school builders can assist districts with mitigating them. If confronted head on, today's budget challenges can be eased, minimizing their compounding effects through careful scheduling and strategic teaming decisions.



BY BRIAN RICH
FORMA
CONSTRUCTION



Forma is replacing Anacortes High School under a GC/CM contract. Alternative delivery methods can help school districts secure contractors and resources before bidding season.

PHOTO BY DAVID W. COHEN

Strained budgets

Most of the funding for public school construction comes from bond measures, which require meticulous planning and political negotiations to get approved. In bond planning, stakeholders begin by assessing the district's needs, eventually arriving at a value that translates into a tax rate.

Politics drive the next steps, which often include reducing both identified needs and targeted costs in order to arrive at something that will be approved by local voters. Finding this balance generally results in budget reductions and tax rate compromises.

Once passed, districts are bound to deliver what was promised to voters or face the consequence of being unable to renew bond funding for future projects.

Our current construction market is flooded with work, and the rising price of commodities results in a narrower range of bid results, often skewing towards the upper end of — or beyond — district estimates. Unfortunately, the bonds and tax rates approved by voters often fall short of supporting the district's real needs — all before considering price escalation.

Thankfully there are still creative solutions districts can apply to make the most of their strained school construction budgets.

Timing is everything

You can always count on school starting back up in September. Our educational calendar is usually the deciding factor in the planning, bidding and construction of schools. For K-8

schools, the site's size and existing facilities generally lead to a 13- to 16-month construction schedule — or two summers and a school year.

Regionally, there are a limited number of general contractors and specialized subcontractors who dedicate their resources to schools' cyclical work flow. But with similar construction booms in local housing, technology, biotech and health care sectors, the region's contractors are struggling to keep up with the demand on labor and construction materials.

School districts are competing directly for these limited resources. Being first to market during the early spring bid cycle can ensure better pricing than summer. Pushing schedules out later and taking projects to bid at the end of the spring can result in inflated pricing, reflecting the contractors' risk in pursuing additional work when resources are limited and securing materials is more challenging.

This is where an opportunity exists to challenge the status quo by allowing a school to open "off cycle" — for example, not in September, but perhaps at the start of second semester, in January. Another schedule shift could simply involve requiring the building be permitted and ready to bid in December as opposed to May.

This strategy allows districts to contract with builders early and helps GCs get a head start on securing subs.

Alternative delivery

More often, districts are using alternative delivery methods like GC/CM and design-build, securing contractors and resources ahead of typical bidding seasons, ensuring their projects will

garner competitive bids from experienced teams.

Another way of securing subs is by hiring mechanical and electrical subcontractors early through MC/CM and EC/CM contracts. This gives the GC/CM or design-build team access to MEP subcontractors' expertise, which can be integrated more efficiently into the project as it moves from pre-construction to construction.

Furthermore, the apparent benefits of alternative delivery methods have led to districts bundling multiple school projects into larger contracts. This serves the dual purpose of enabling the district to secure construction staff and build resources while benefiting from the logistical and financial efficiencies that one design-builder or GC/CM can achieve across multiple projects.

Reconsidering the size

Despite the best pre-construction planning, a project may reach a point where no amount of system optimization or value engineering can realign it with its budget.

At times like these, district stakeholders must begin by revisiting the physical size of the school project. This process can be painful for community stakeholders and district leadership as well as the design and construction team, who have all been working collectively toward an ideal end goal.

Sometimes these projects fit the true needs of the district but are out of alignment with what was able to get approved through bond measures.

The simple fact is that a project's square footage is the single greatest driver of construction costs. Despite furniture and fixtures and the levels of finish quality, budgets are simple arithmetic: units multiplied by unit price. In this equation, focusing

on how those unit counts were identified at the start of the project can help inform where the math went wrong.

Keeping perspective

Throughout the project planning phase, users are often replacing a school building that is long past its useful life. The limitations of an existing facility will probably be identified as a top priority in its replacement,

but this could result in costly design decisions.

Whether it's a focus on toilet counts, acoustical performance, thermal comfort or classroom size, it is important that we help end users identify their needs in a realistic context, ensuring that the resulting design doesn't overcompensate — compounding budget problems.

This region is experiencing

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ON THE COVER

Genesee Hill Elementary opened in 2016 in West Seattle. BLRB Architects was the designer and Spee West Construction was the general contractor. Heery International was the construction manager.

PHOTO BY BENJAMIN BENSCHNEIDER/BLRB ARCHITECTS

DJC TEAM

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SEE-THROUGH

CONTINUED FROM PAGE 6

transparency in schools affords more opportunities for passive supervision of common areas.

A school with an open central commons lets teachers allow students to test their independence as they develop, all within the safety of caring adults who are standing by and supporting them. Students feel secure knowing that dependable adult eyes are watching, decreasing the possibility of bullying.

In our experience, these emerging trends have shown significant positive impacts on learning

environments. Transparency is a powerful tool for supporting life-long learners and an amplified school culture.

Humans are natural learners, and the spaces we design to support education can help spark the voracious curiosity of our children if we just offer them things about which to be curious.

Jordan Kiel is a principal at Bassetti Architects and the project architect for Stewart Middle School in Tacoma.

STRETCHING BUDGETS

CONTINUED FROM PAGE 3

unprecedented growth in job opportunities, population and a rise in home prices — all of which directly impact the needs of our community schools. With budgets stretched thin, our local school districts are working tirelessly to deliver state-of-the-art learning facilities for students of all ages.

With the right design and construction partners at their side

and some creative planning, school districts can make the most of every project dollar.

Brian Rich is chief estimator at Forma Construction. With nearly two decades of experience in estimating, project forecasting and pre-construction, Rich leads estimating for all of Forma's education projects.

NET ZERO

CONTINUED FROM PAGE 2

around the world, several certification programs verify performance and develop case studies, including the Seattle-based International Living Future Institute's Living Building Challenge and Zero Energy Certification program.

While net-zero energy definitions and certification programs vary, the feasibility of this design strategy has been proven in public and private projects, led by a growing number of energy experts in the local design and construction community.

One example of a local school using solar PV to meet net-zero goals is Seattle's Bertschi School. It incorporates passive and active energy-efficiency measures, with more than 100 percent of the building's net annual energy demand produced by renewable energy.

Bellevue School District has been a local pioneer in driving down the energy use of its new facilities, with Puesta del Sol Elementary School, currently in design, targeting net-zero by installing up to 300 kilowatts of PV panels.

A sensible choice

The availability of grant resources, net metering credits and renewable energy production incentives, coupled with rapidly reduced costs for installing solar PV, makes developing net-zero energy schools increasingly more financially viable and sensible.

Government agencies are encouraging sustainable design, and K-12 schools are implementing net-zero strategies into their performance goals. These strategies provide cost savings and benefits to students, teachers and the broader community.

Similar to how a tree operates within the carrying capacity of its site, net-zero energy schools can serve as a biophilic design strategy to limit environmental impacts while educating and inspiring the next generation of leaders.

Jack Newman is a sustainable design consultant at Sazan Environmental Services and formerly managed the Zero Energy Building Certification program for the International Living Future Institute.

LIGHTING

CONTINUED FROM PAGE 4

auditorium, we placed the drivers separate from the LED fixture housings.

By placing the drivers over the aisles rather than over fixed seating, OSU can maintain the fixtures safely and easily. These sorts of decisions are what design is all about — creating user-friendly spaces.

Energy efficiency is also important to our future and to OSU. Using LED products and an energy-efficient design approach, the project interior lighting is designed to 75 percent of what energy code allowed, while the exterior is designed to just 48 percent of the energy code allowance.

Energy savings saves costs on electricity, which allows OSU to repurpose that savings toward other important endeavors.

Beaver branding

School spirit is important to players, students, alumni, potential recruits and your author, a proud alum of OSU.

The first thing visitors experience is the expansive, three-story atrium, which includes a branding wall just as high. Wall-washing luminaires mounted from the ceiling illuminate the wall, which expands OSU's brand outward to the campus exterior for all to see. Fixtures integrated into the window mullions light the space as well, which make it glow like a lantern at night.

Emphasizing branding with light takes col-

laboration. The entire design team shared plans for graphics and branding moments to ensure that we highlighted them appropriately and with the proper prioritization.

Strong branding is displayed throughout the locker room, including an illuminated shelf at each locker that highlights every Beaver helmet. Accent lighting at graphic walls adds to individual and team pride — and serves as a recruiting tool.

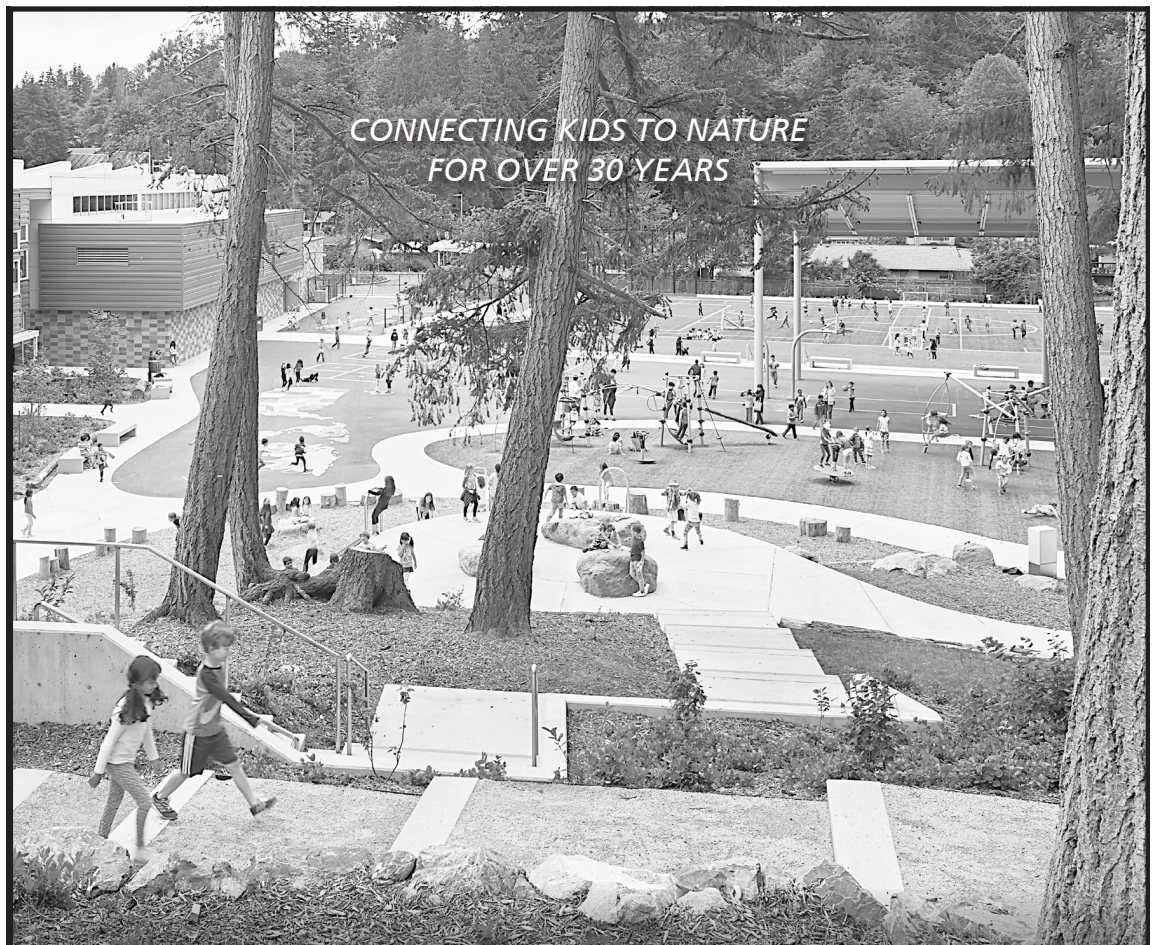
Just after the project was completed, OSU published a video on social media showing the players entering the locker room for the first time, and it brought a huge smile to my face. I watched with joy as the players practically ran through the space, dancing and taking selfies.

The facility adds to the pride of being part of the Beaver football team.

As a lighting designer and an OSU alumna, it was an absolute pleasure working on this project, and I'm thrilled to have taken part in perpetuating the legacy of OSU through flexible design and up-to-date technology.

The behind-the-scenes design efforts have given OSU a facility that is relevant today and adjustable for the future, supporting the university's students and football program... and, go Beavs!

Alison Fiedler is an associate and lighting designer at Stantec in Seattle. She is also a proud graduate of Oregon State University.



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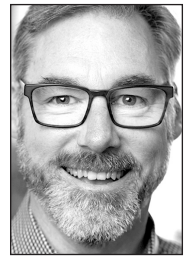
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THE VIEW FROM INSIDE A SCHOOL: WHAT REALLY MAKES IT SAFE

Security shouldn't come at the expense of making students feel welcome, says one school staffer.

As a society, we have a shared responsibility for vigilance when it comes to the safety of our schools.

At McGranahan Architects, we believe that the design of effective, inspiring learning environments can contribute to keeping the children, families and educators who inhabit them safe. That's why we chose the topic "Safety and Security" for our recent series of weekly learning sessions.



BY MICHAEL
MCGAVOCK
MCGRANAHAN
ARCHITECTS

While much of the focus is on the active shooter, we learned that the topic is broader than commonly thought, including assault, bullying, suicide prevention, school climate, disease, food poisoning and natural disasters.

We invited four panelists from local school districts to join our conversation: an office assistant at an elementary school, an instructional coach and former teacher, an elementary school principal, and an assistant director of safety and security.

We prompted them with two questions: "From your perspective, what makes a school safe and secure?" and "What are the challenges you've experienced in creating that environment?"

Discrete measures

Luz is the first person parents, staff and students see when they come in through the front door of her elementary school in Federal Way.

She emphasized the importance of a friendly, welcoming and approachable impression as soon as a student enters the school.

"Some of our scholars are coming to school for the first time and are afraid to be away from the security of their home," she said. "Not to mention the new parents that are leaving their children at a school for the first time."

From her perspective, schools in general are becoming more secure, but at the expense of a welcoming experience. She showed our staff photos of schools that resembled deten-

tion centers.

Luz's primary message was one of discrete security, especially for elementary schools: buzzers and ID cards at the entrance instead of a "hardened" look that could potentially startle children and their parents, actually making them feel less safe.

An open environment

As an instructional coach and former teacher, Booth works with teachers during their acclimation to a new school design.

From Booth's perspective, school design should address the needs of what he calls the "everyday student" instead of a student in the midst of a catastrophic event, such as a school shooting. This means designing for the challenges a student might face on a daily basis, such as bullying, intimidation or harassment.

Booth emphasized the need for transparency to ensure high visibility and allow teachers to work one-on-one with students.

"What do you do in a lockdown?" That's one of the first questions Booth hears about the open, transparent design of his new school.

Booth challenged designers to re-frame the question and consider the benefits that open, collaborative environments may have on bullying and harassment rates, which have dropped in his new school.

Booth's takeaway was that we might be asking the wrong questions, which may be leading us to design for the worst-case scenario instead of acknowledging the need to resolve daily safety issues.

Building relationships

Anita, the Tacoma elementary school principal, confirmed the importance of creating a welcoming place, and emphasized relationships as the crux of behavioral problems that could lead to extreme events, such as school shootings.

In her school, many students come from low-income families, with parents who might be unavailable to their children for one reason or another. One of her main concerns is building and maintaining strong relationships — between the school and the community, between teachers/staff and students, but also between the students and their



Schools can employ a range of safety measures without looking like detention centers.

PHOTO BY DANE GREGORY MEYER

parents/guardians.

She noted, "We have parents who work nights, so bringing their kids in for breakfast and eating breakfast with them is the only time they're having a

connection. So am I going to stop every parent at the door? No. I have to have that trust and have them feel welcome."

She felt as though "hardening" the entrance of the school dis-

couraged and weakened parent-student relationships that might already be strained. Instead, she emphasized visibility and staff

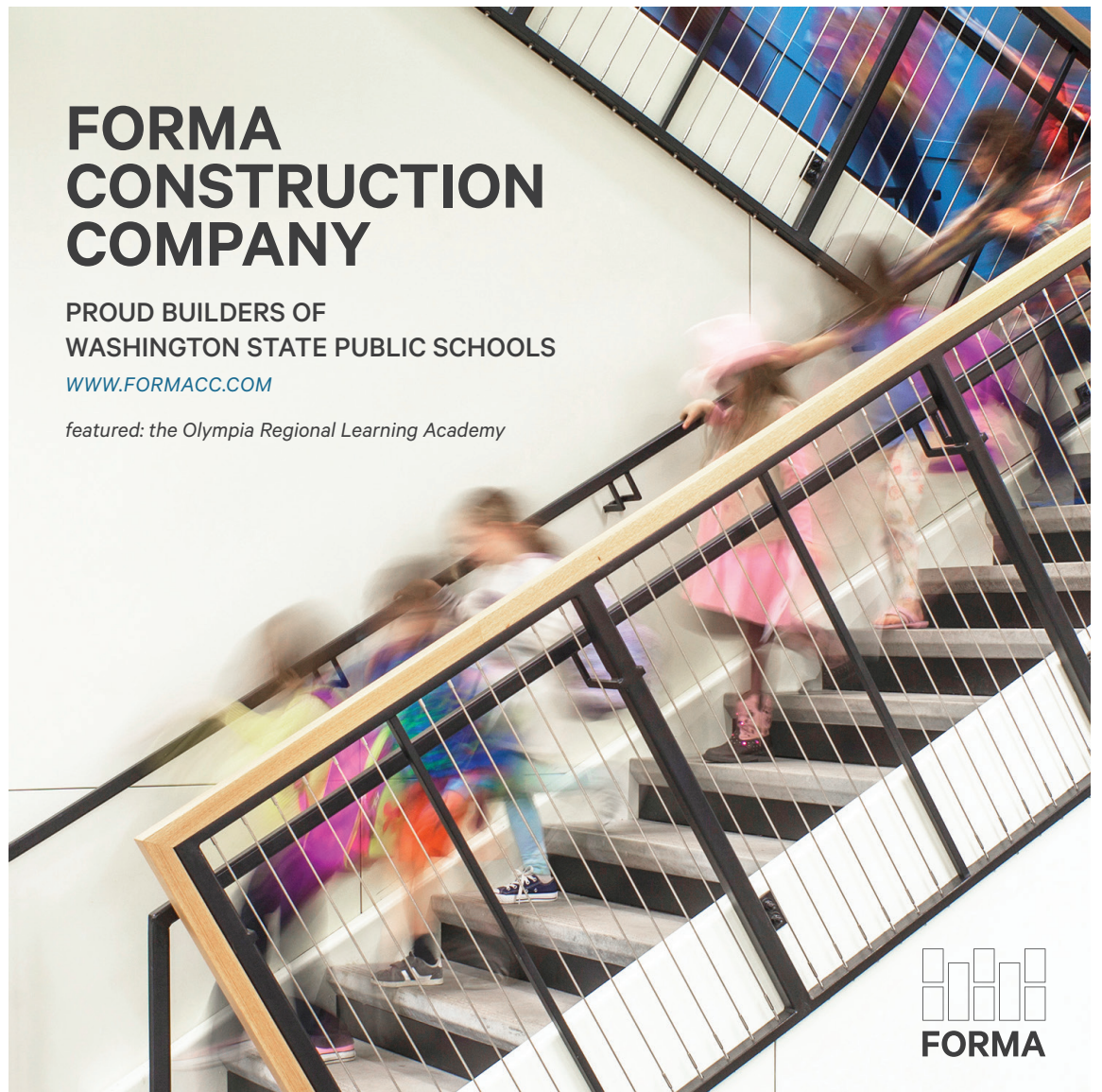
SAFE SCHOOLS — PAGE 15

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