

Leaner, More Effective Schools

Twenty-first century school configuration reduces operational expenditures and promotes student learning.

By Randall Fielding, AIA

School districts across North America are facing a crushing dilemma: invest millions of dollars to maintain outdated, educationally ineffective buildings or seek funding for expensive renovations, additions, and new construction to meet the evolving needs of today's learners.

Compounding the issue is deferred facility maintenance. According to data collected for *American School & University's* 38th annual Maintenance and Operations Cost Study, expenditures for upkeep in American public schools declined from 11.31% in 1990 to 7.43% in 2003. Yet school buildings and their systems continue to age, putting more financial pressure on districts whose students are not being well served.

Educational spaces whose designs are based on research in effective learning, where multiple modalities and individualized learning are accommodated, aren't as expensive as you might think. At the most basic level, using a portion of the funds allocated to maintenance for modest renovations leads to leaner, safer, more effective school facilities.

But to accomplish this objective, our preconceptions about what a school should look like must be challenged, and that can be difficult. School buildings, and particularly classrooms, have moved beyond being simple spaces; they are now iconic. The idea of changing their fundamental structure seems too radical to consider. But it shouldn't be.

At Sinarmas World Academy in Indonesia, a variety of textures and furnishings reduce noise and create a homelike atmosphere.





At Cristo Rey High School in Minneapolis, a line of administrators and teachers greets students when they enter school in the morning.

Think back to the corporate world of the 20th century. Picture the rows of offices, seas of desks and cubicles, and endless hallways. They supported a hierarchy and kept it firmly in place, much like the traditional classroom, with students in desks facing a teacher who delivers and filters knowledge “downstream.”

Now, think about what the most innovative and successful companies of the 21st century are like. For example, “Google strive[s] to maintain the open culture often associated with startups, in which everyone is a hands-on contributor and feels comfortable sharing ideas and opinions. . . . [Its] offices and cafes are designed to encourage interactions between Googlers within and across teams, and to spark conversation about work as well as play” (www.google.com/about/company/facts/culture/).

How can our kids learn the skills that Google and other forward-thinking companies want in their

Students enter a large gathering space filled with natural light and comfortable furnishings.

people if they are learning in spaces designed to produce workers for past centuries?

Let’s look at the kind of 21st-century school configuration that not only reduces operational expenditures but also provides a safer and healthier educational environment.

The Learning Community Model

In a traditional school, 20% or more of the building consists of corridors—spaces for short transitions and lockers. Meadowdale Middle School, a new public school north of Seattle, Washington, offers a more effective learning environment with less space wasted on corridors. The building eliminates most of that wasted space by establishing multiple learning communities, in this

case defined by 125 students each, which center on an agile commons space and provide many different sizes of educational areas rather than rows of classrooms.

Not only does this configuration use less square footage per student, it creates a safer environment for learning. At Meadowdale, each community is small enough that all the teachers and students know one another, and a sense of belonging and ownership develops within the space.

In traditional schools, bullying and petty vandalism are common in school hallways because they are not always adequately supervised. A learning community is smaller and thus easier to supervise. Teachers have a greater presence and their passive supervision encourages better behavior.



Learning commons at Meadowdale Middle School in Washington State. By eliminating corridors, easily monitored common areas create a safer school atmosphere.

At Meadowdale, students don't travel as far throughout their day, so they don't all need lockers; backpacks on hooks are more convenient. Again, adults with their "eyes on the street" safeguard the space, offering fewer opportunities for theft, vandalism, or bullying.

In addition to the safety aspects, proper lighting and ventilation are important for effective learning. Studies show that natural light affects test scores by as much as 20%. Every learning space should have as many sources of natural light as possible, and interior spaces should have transparent panels to allow daylight as well.

For proper ventilation, Meadowdale's commons area is directly connected to the outside. If that feature is not possible, classrooms should have windows that open, transoms, ceiling fans, and cross ventilation in order to get fresh air into the learning spaces.

Feels Like Home

In response to highly publicized instances of school violence, many districts installed security guards and metal detectors at their

entrances. Certainly, these precautions help provide security, but they do little to improve the overall atmosphere of the schools. Entering school every day through a metal detector does not create the sense of trust a student needs to feel safe and to learn well.

At Cristo Rey High School, located in a challenged neighborhood in Minneapolis, Minnesota, a line of teachers and administrators greets students by name and with a handshake. Students enter a large gathering space filled with natural light and comfortable furnishings, where they socialize until the school day begins.

School buildings, and particularly classrooms, have moved beyond being simple spaces.

To be at their safest, schools need caring adults to monitor activity in an alert, but calm way. In Meadowdale Middle School, the main entry goes right through the administration area and into the central school commons. As Ed

Peters, capital projects director for Edmonds School District, says: "It's the easiest school in the district to supervise. I can stand here in the commons and see most of the school from this one vantage point." Sight lines and transparency are the keys to this passive monitoring concept.

Isn't all that open space loud? Unlike those open schools of the 1970s, the learning community of the 21st century still has distinct and varied spaces for lectures, group activities, and individual study. Different purposes call for different surface treatments and acoustical considerations. The geometry of the space and surface materials in a common area absorb sound. Ceiling treatments, soft furnishings, and the strategic use of carpeting can reduce noise bounce *and* create a more homelike atmosphere.

Creating Leaner, More Effective Schools

School district leaders, staff, teachers, parents, students, and community members need a common understanding of the issues and the actions necessary to truly effect change. Starting from a shared vision that's built on a well-established practice in learning and design will allow your community to jumpstart the change process. There's no need to experiment on children or risk your capital investments in untested designs.

Pilot programs enable any school or district to create a living labora-

tory for change. Forming a team and choosing a space to renovate lead to a pilot program based on the learning community model. There, teachers and administrators can experiment with their curriculum and explore new ways of teaching



At Hillel Elementary School in Florida, the learning spaces all receive natural light, and many open directly to the outside.

that expand their options in an optimized environment, then gather data on maximizing the return on capital investment.

In the Cleveland Heights-University Heights City School District in Ohio, several pilot-project environments are being built to extend its

professional learning community concept from theory into a concrete model. This district is committed to changing into a common resource district on both a macro and micro level—where ideas, responsibilities, and physical learning spaces are shared, much the way they are at Google.

Leaner, safer, more effective school facilities are possible at all levels of capital expenditure, or even by using projected maintenance funds to configure space that is better for health, safety, and learning. Reconfiguring schools into learning communities creates an atmosphere of inclusion and produces active learners equipped with the skills they need for successful futures.

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