

School

SUPPORT

Making a case for better site design. By Christopher Tramutola and Peter Gisolfi

The population of the U.S. continues to grow modestly. This trend provides a continuing need for new or expanded public school buildings. At the same time, the expansion of early childhood education (starting schooling before age five) and all-day kindergarten also means expanded space for American schools. Also, due to continuing changes in educational methods, it is often necessary to reconfigure existing buildings or even construct new ones. Both expansion and change offer opportunities to improve the relationship between school buildings and their sites. This article addresses two ways to think about sites for public schools. How should sites for new school buildings be chosen and planned? And can existing schools be expanded and reconfigured to take better advantage of their sites?

Peekskill, New York

In 2004, the city of Peekskill, New York (pop. 24,000), determined that the C-shaped Peekskill Middle School (built in the 1920s as Peekskill High School and later converted to the middle school) could no longer accommodate the needs of students or satisfy the community's requirements. The conventional double-loaded corridor configuration (hallways with classrooms on both sides) created entirely separate classroom spaces.

In contrast, the new middle school would use grade-level clusters and smaller "houses" (wings) within the larger structure so that students could experience a small school environment. The original building was inflexible and unable to meet that need.

A site selection study conducted by our firm (Peter Gisolfi Associates) evaluated various locations to replace the school; it became apparent that the school's original site was best. While alternative sites were larger and less sloping, the original site was closely tied to its residential and commercial neighbors, and well placed near the center of the city.

Both the building and its related open space are located on a four-acre site, served by two parallel streets. The upper street is in a residential neighborhood; the lower street is zoned for commercial and industrial uses. In essence, the school serves as a link between two types of land use.

The site descends about 80 feet from east to west. On the upper (eastern) portion of the site was Peekskill's original high school building, which continued in use while the new building was built downhill of it. After the old building was demolished, the uphill space was transformed into a playing field that doubles as a neighborhood green.

The new Peekskill Middle School Community Center and City Green was completed in 2009. It defines two western-facing courtyards—a more private one for the two houses of the middle school, and a more public one to serve as the entryway from the commercial street below. The five-story building rises with the slope and presents a two-story edge to the new community green on the east side at the upper level.

The school's entrances are located on both the west and east sides, with buses and pedestrians accommodated on the east, where the traffic is less intense. Another highlight of this unique site: It offers spectacular views of the Hudson River from classrooms, lobbies, corridors, the library, and the cafeteria, which all face west. The unusual arrangement on this site demonstrates that site planning and the creation of defined outdoor spaces can serve both the educational goals of the school and the planning interests of the wider community.

NEW BUILDINGS ON NEW SITES

When planning for *new* educational institutions, a number of factors should be considered:

CENTRAL LOCATION. Historically, American schools were located at the center of town. They were seen as civic institutions—along with the library, city hall, and churches. The central location makes the school accessible to students and ties it to the community. This has changed dramatically over the years, but planners could help communities get back to it when zoning is updated and the town plan is formulated or amended.

ROOM TO EXPAND. On the other hand, educational institutions have a wide range of requirements for indoor and outdoor space.

After WWII, it became common to locate schools on larger sites, often in more remote areas of the community. All that space meant that multiple athletic fields and parking lots could be incorporated easily within the site plan.

STATE REQUIREMENTS. Departments of education in most states have established requirements for site size for new school buildings. These standards tend to favor larger sites, which are not usually available in the center of town.

Today, however, we should ask whether minimum site dimensions are the best approach. It may better serve schools and communities to select sites that can accommodate current uses and allow for potential expansion. An analysis of the community's existing infrastructure and needs will play a large role in this decision.

INDOOR-OUTDOOR SPACES. Ideally, buildings should be configured to define outdoor space; this approach lets outdoor spaces serve complementary uses. A typical example would be a series of exterior courtyards incorporated into the school's design.

EXCLUSIVE-INCLUSIVE CAMPUS. Traditionally, only colleges and private schools had cohesive campuses. But most public schools can have campuses, even on relatively small downtown sites. Open spaces on school campuses can be arranged to indicate which spaces are used more exclusively by the school, and which spaces are also available to the wider community.

PEDESTRIAN PRIORITY. The combination of buildings and outdoor space should be configured to create safe havens, both indoors and outdoors, for learning and social interaction. Ideally, the school site should be designed to give priority to pedestrian movement. This usually means keeping service, access, and parking functions at the perimeter, and creating zones devoted exclusively to pedestrians.

SUSTAINABILITY. Sustainable design takes advantage of the natural features of the site, such as orientation, local climate, and slopes. Designing with these factors in mind results in regionally appropriate, energy-efficient solutions that can also become part of the school curriculum.

EXISTING BUILDINGS ON RECONFIGURED SITES

In most cases, school construction takes place on sites that are occupied by existing buildings. The following factors should be considered:

CONTINUITY. Often the community wants to preserve or enhance the historic essence of the place. An enduring site or campus plan might celebrate its evolution over the years.

CHANGE. Existing buildings may need to be modified to accommodate new functions; academic needs and spaces change constantly.

ENHANCEMENT. Whenever possible, older buildings should be saved and repurposed. Geothermal heating and air conditioning, insulation, and energy-efficient lighting are some of the improvements that can support sustainable design in older buildings.

CONNECTION. It is advantageous to establish a coherent relationship between a building and the site's open space since both will be evolving. Changing the building configuration often presents opportunities to create useful outdoor spaces.

ONGOING CONSTRUCTION DURING THE SCHOOL YEAR. It is common for construction to continue while school is in session, but spaces under construction have to be separated from the stu-

dents. Ideally, the most intense construction activity will occur during summer break and other holidays. Typically, when expanding school buildings, we try to construct a new wing apart from the existing school during the academic year, and then make the connections to the existing buildings during the summer break.

Tuckahoe, New York

The much-loved 1930s Tuckahoe Middle School-High School is located on a tight five-acre village site surrounded by single-family houses in Tuckahoe, New York (pop. 6,600). The western part of the site is occupied by the existing building; the eastern portion contains the football field and bleachers.

In 2007, when the community needed to expand the school, it chose to construct a new science wing for the middle school-high school, and to convert the existing science labs to classrooms. The existing building was arranged with a double-loaded corridor and entry along the southern street; that main corridor connected to three shorter dead-end corridors.

The new three-story science wing, constructed in the style of the original building, occupies the northern edge of the site with a new single-loaded corridor (classrooms on only one side of the corridor and windows on the opposite side). The glass corridor is located on the southern edge of the addition, attaching to the formerly dead-end hallways. The new configuration creates two green courtyards surrounded on two sides by glass-walled corridors.

On a densely occupied site, 21,000 square feet of new space has been accommodated. The dead-end corridor problem has been eliminated, and the building is organized logically. A relatively small addition has transformed an existing school on a tight site into a better functioning building with a clear circulation pattern and enhanced outdoor awareness and access. The new outdoor courtyards reinforce the sense of community.

Kansas City, Missouri

Pembroke Hill Lower School, a private preparatory school, is located on the 10-acre Wornall Campus in the residential Sunset Hill neighborhood of Kansas City, Missouri, directly across the street from Loose Park, a historic Civil War battlefield. The lower school had served children from kindergarten through grade 5. The school wanted to expand Pembroke Hill's educational program to serve preschoolers (three- and four-year-olds) and better prepare them for later years. The challenges were to add a new Early Years Building to the small campus, and to modestly expand the school dining hall. Our firm and Mackey Mitchell Zahner were hired to lead site planning and architectural design.

The original site plan favored automobile parking and drop-off on both the north and south sides of the site, compromising the safe haven for children on the campus. The new site plan changes the relationship between automobiles and pedestrians. Parking at the center of the site has been eliminated and replaced by the Early Years Building. The central courtyard of that building provides a protected place for the youngest students to play.

Overall, the new site plan creates a core pedestrian zone, which is safe for children; the campus is better served by a clearer pattern of auto access, drop-offs, and parking; and the original main quadrangle is entirely separated from car traffic. The plan also creates a new south-facing entry quadrangle, defined on its west side by the Early Years Building. The expansion was completed in 2002.

IRVINGTON MIDDLE SCHOOL-HIGH SCHOOL COMMUNITY CAMPUS: A Reconfigured Site; Irvington, New York

BASIC PROJECT STATS: SQUARE FEET BEFORE: 135,000; SQUARE FEET AFTER: 225,000; STUDENT CAPACITY: 1,260; OPENED: 2006; ARCHITECT: Peter Gisolfi Associates

The plan retains the 1960s L-shaped main building—which was significantly renovated, including a new two-story library that replaced the auditorium—and adds 90,000 square feet of new construction. The new campus plan is based on the idea of the agora, the market square of ancient Greece. A series of informal, outdoor rooms are connected by colonnades that shelter students as they move between buildings.



Irvington, New York

Irvington Middle School-High School Community Campus is situated on a generous 30-acre site that is located along a major north-south road, somewhat removed from the center of Irvington, New York (pop. 6,500). The site was developed for the public high school in the 1960s. The original site plan featured an L-shaped building set among parking lots and playing fields. Immediately to the north and south are residential developments that were constructed later.

Because both the community and school populations were growing, district-wide changes were needed. The original middle school, located on Main Street, was converted to a second elementary school. The new plan for the high school site adds a new middle school and expands the high school. The entire complex

accommodates 1,260 students in both divisions; the original high school building fit 500 students.

As designed by Peter Gisolfi Associates and built between 2003 and 2006, the school campus plan is based on two quadrangles surrounded by preexisting and new buildings. At the direction of the school board, all of the buildings are linked by covered outdoor walkways. The high school and middle school have separate identities but share many spaces, such as the library, the gymnasiums, the cafeteria, spaces for the arts, and the science building. The large auditorium, the main gymnasium, and the playing fields and track are all used by the wider community.

On a post-WWII site, which was originally developed somewhat haphazardly, a new, coherent campus has emerged: The zones for pedestrians and automobiles are clearly separated; the quad-

rangles are defined by the preexisting high school and four new interconnected buildings. This type of site planning is often seen in connection with private schools, but is rarely implemented for public schools. During three years of phased construction, the building was continuously occupied. The campus model of separate buildings connected by covered walkways was adaptable to this type of construction.

Taking open space into account

American schools and their sites are building blocks of the community; they last through generations. The school site plan should respect and accommodate the surrounding urban fabric. Simultaneously, the plan should partially separate the school from the urban environment to create outdoor spaces that pertain specifically to the school, giving children a sense of protection and safety while still being engaged with the wider community.

That careful balance is illustrated in Peekskill, where the site planning for the landscape and buildings creates a public green (a playing field), a semipublic entry courtyard, and a more private middle school courtyard—all relating to the wider landscape of the Hudson River Valley.

Site selection and the configuration of buildings and open space on the site can contribute to the success of the place. All of the examples speak to that point: Courtyards were created; quadrangles were formed; playing fields and parking lots are accommodated; pedestrians are separated from automobiles and buses. In essence, the arrangement of open space influences—and complements—the configuration of the buildings.

Educational institutions are not simply places for instruction; they are places where students grow and learn to interact socially. For children and their parents, they are a crucial community within the community—the site plan and buildings should reflect that. ■

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RESOURCES

- SCHOOL RULES** California's school site requirements are explained here: www.cde.ca.gov/ls/fa/sf/guideschoolsite.asp.
 EPA School Siting Guidelines: www.epa.gov/schools/siting/downloads/School_Siting_Guidelines.pdf.
 ChangeLab Solutions: <http://changelabsolutions.org/publications/smart-school-siting>.
 The state of Oregon's school siting handbook, which may be a model for other states: www.oregon.gov/LCD/TGM/docs/schoolsitinghandbook.pdf.
 Partnering with K–12 Education In Building Healthy, Sustainable, And Competitive Regions: A California Policy Symposium, Center for Cities + Schools: http://citiesandschools.berkeley.edu/reports/ProceedingsSum_062113.pdf.
 For a look at school site requirements from a half-century ago, see *School Site Selection*, Planning Advisory Service Report 175, published in 1963: www.planning.org/pas/at60/report175.htm.

SCHOOL'S IN (TOWN) By Meghan Stromberg
 THINK THE NEIGHBORHOOD school is a thing of the past? Think again. Here are several educational facilities that are at home in their city settings.



DUNBAR HIGH SCHOOL: Vertical School on a Compact Site Washington, D.C.

BASIC PROJECT STATS
 SQUARE FEET BEFORE: 300,000; SQUARE FEET AFTER: 280,000;
 STUDENT CAPACITY: 1,100; OPENED: 2013;
 ARCHITECT/MASTER PLANNER: Perkins Eastman

The new Dunbar school sits in the same spot as a 1917 collegiate Gothic building that was demolished in the 1970s and replaced with a brutalist, nearly windowless tower (since razed). Today's 8.5-acre site breaks up the 1970s-era superblock, reopening an adjacent street and linking the campus to the Truxton Circle neighborhood. The four-story school's heart is a two-story, atriumlike space with a monumental stair—honoring the focus of the 1917 building. Parking is integrated into the building, and thanks to a zoning waiver, there is just enough for faculty and staff. Students can take transit (bus and rail) or use bike share. Designed to achieve LEED for Schools Platinum, the building features a geothermal system, photovoltaics, and a rainwater reuse system.

ON A RELATED TOPIC



NORTH ATLANTA HIGH SCHOOL: Office to School Conversion
Atlanta, Georgia

BASIC PROJECT STATS

SQUARE FEET BEFORE: 406,093; SQUARE FEET AFTER: 507,000;
STUDENT CAPACITY: 2,350; OPENED: 2013;
ARCHITECT/MASTER PLANNER: Cooper Carry

Once home to an IBM office with 5,000 workers, a leafy, 56-acre campus in the Buckhead neighborhood now houses North Atlanta High. One dilemma: how to efficiently move 2,350 students through the 11-story tower. The solution: a system that gives staff and those with disabilities elevator access to every floor while other students have limited elevator use, encouraging them to use the stairs. A new assembly building accommodates the auditorium, gyms, and other gathering spaces. A parking deck holds 900 cars, and there's also a bus stop nearby. Surface lots were converted to sports fields. The site has a lake and views of the Atlanta skyline.



Jeffrey Vincent and Deborah McKoy, cofounders of the Center for Cities and Schools at UC Berkeley.

CITIES AND SCHOOLS LEARN TO WORK TOGETHER

MOST PLANNERS WOULD AGREE: Communities would benefit if cities and schools were true collaborators.

That is the premise that drove Deborah McKoy, with a background in education and public policy, and Jeffrey Vincent, an urban planner, to found the Center for Cities and Schools at UC Berkeley in 2004. The center (<http://citiesandschools.berkeley.edu>) fosters cross-sector collaboration—providing research, technical assistance, and policy guidance to planners, educators, and policy makers for policies and practices that expand equity and opportunity for young people. It also engages young people in building healthy communities and schools through an educational strategy and program called Y-PLAN (Youth—Plan, Learn, Act, Now!). McKoy, the group's executive director, and Vincent, the deputy director, spoke with *Planning's* executive editor Meghan Stromberg in July. Here's an edited transcript.

Meghan Stromberg: HOW DID THE CENTER GET STARTED?

Deborah McKoy: Jeff and I were both doing research at Berkeley. I was working around the country in public housing communities, asking . . . how do you improve quality of life for families? I was advising relocation plans, [but found] it was rare that when and where kids were in school was even taken into account. I learned [about the importance of connecting housing] to education and the importance of quality housing on kids' ability to do well in school.

Meanwhile, Jeff was doing research on school siting and joint use of schools. . . . We [saw that] we needed to have a formal place that looks at the relationships between cities, schools, and planning [and] really importantly, the consequences of when you don't look at that alignment.

MS: WHAT ARE SOME OF THOSE CONSEQUENCES?

Jeffrey Vincent: Regional issues of [school] segregation and a lack of geographic opportunity for some families and individuals is really a function of planning issues: housing development, transportation access. . . . The schools have been dealing for decades with the effects of that.

MS: HOW HAS THE RELATIONSHIP BETWEEN PLANNERS AND EDUCATORS CHANGED IN 10 YEARS?

DM: Today it's a national conversation. City and school collaboration is incentivized at the national, regional, and local levels. . . . It's a requirement in Choice Neighborhood [the U.S. Department of Urban Development public housing program that followed HOPE VI] federal grants to talk about how are you going to connect to local schools [and] understand the implications of school quality. . . .

JV: The real nut to crack is: How do these entities work together after overcoming the really entrenched silos [they operate in] to create high-opportunity communities for all families?

MS: WHAT KIND OF COLLABORATION IS HAPPENING?

JV: School siting—planners have been interested in [that] for many years. Planners have bemoaned some new school siting practices as driving sprawl . . . and I think we're starting to see more work locally to try to coordinate that, although it's still tricky.

Another one is the joint use of school facilities and grounds. Particularly from a public health perspective, [it helps] in getting more physical activity opportunities after school and on the weekends for students, their families, and the community. Places like Charlotte-Mecklenburg, North Carolina, [do that well].

MS: HOW HAS THE CITY-LIVING TREND AFFECTED EDUCATION?

DM: Right now, people are trying to figure out how you keep middle-income families . . . in city schools. School choice is part of that shift in education [policy] to make more opportunities for children to succeed in school and for families to stay.

JV: We're seeing a market shift in younger adults and Millennials really wanting urban amenities. When they do have kids, they don't want their main choice to be to move to the suburbs for safer neighborhoods and better schools.

MS: WHAT ARE THE PLANNING IMPLICATIONS OF SCHOOL CHOICE?

DM: Transportation [is one]. We talk about school choice . . . but if you don't have transportation options that enable exercising choice . . . then really the choice is for whom? People with cars. The public transportation system is increasingly important if you want to reach all families.

MS: DOES SCHOOL CHOICE DRAIN KIDS OF MEANS OUT OF NEIGHBORHOOD SCHOOLS?

JV: Cities are grappling with that right now, and over the next few years we'll see what happens. A lot of urban school districts across the country are going through waves of school closures. When a community institution like that shuts its doors it can really impact the community, both positively and negatively, but it also shifts market demand in those neighborhoods, it shifts transportation patterns. It pulls people in, it pushes other people out.

That dynamism is happening in Philly, in Chicago. There are some really interesting questions about how those cities are going to emerge in the future—who they will cater to. [Public education] is really being remapped as cities are changing. And we have to keep an equity lens on that transformation.

“La Escuelita is a fantastic example of a real out-of-the-box approach that we need more of: mixed use, great design, and in the heart of the city. A win for the community and a win for the students.”

—Jeffrey Vincent, urban planner, cofounder of the Center for Cities and Schools at UC Berkeley.



LA ESCUELITA: Multiple Ages, Multiple Purposes
Oakland, California

BASIC PROJECT STATS

SQUARE FEET BEFORE: about 94,000; **SQUARE FEET AFTER:** 123,000; **STUDENT CAPACITY:** 360 elementary, 180 high school, 168 child care; **OPENED:** 2012 (Phase I), 2014 (Phase II); **ARCHITECT/MASTER PLANNER:** SVA Architects (formerly MVE Institutional)

In Oakland, the Downtown Education Complex, also known as La Escuelita Education Center, combines a K-5 elementary school, a magnet high school, administrative offices, a district-wide TV studio and IT data center, an early childhood development center, and a community health clinic, all on one dense 5.6-acre site. It was built (in two phases) while school was in session. All schools—and the community, on nights and weekends—share common spaces, but each maintains its own identity, entryways, and drop-off zones. The planning process, conducted in four languages, invited students, teachers, and others to help design the site using gaming techniques. The school is grid neutral, with photovoltaic arrays. Other sustainable features include daylighting orientation, passive cooling, and rainwater harvesting.