

Midcentury Modern High Schools: Rebooting the Architecture

By Kevin Havens, AIA



At Naperville Central High School, an outdoor courtyard is being converted into a three-story, sky-lit atrium with a new commons, cafeteria, and kitchen. Suffused in natural light, this new, centrally located addition will be a gathering place for students and faculty and a hub for extracurricular activities.

buildings with long, unconnected corridors that inhibit students' ability to move quickly and easily between classes.

The classrooms in these high schools, even those in the relatively new additions, reflect the 1950s' education pedagogy: a teacher at the front of a rectangular room lecturing students seated in neat rows of desks. Pedagogy has evolved significantly since then. We now recognize that students learn in different ways: visually, auditorily, and kinetically. In addition, teachers are using new strategies, such as problem-based learning and differentiated instruction. Traditional learning environments are no longer functionally appropriate for the different teaching styles and other activities that are integral to modern education.

Another common trait shared by midcentury modern high schools is a lack of public spaces. Educators at the time did not think "outside the classroom" and concepts such as "watering holes" or technology-enriched lounges for socializing and collaborative learning were beyond their imagination.

A high school is more than a building; it's a repository of memories for many community members. High schools built at the turn of the century are not only cultural and civic landmarks, they are also often architectural treasures. When these facilities become outdated, a renovation that preserves the building's aesthetics and character is usually the preferred option.

Today, the post-Gothic "generation" of high schools built in the 1950s and 1960s are often in disrepair and unsuitable for the needs of 21st-century students. Unlike their predecessors, however, these schools are not architectural icons; most are worn, drab, and dated. Yet many community members still consider

these buildings "their schools" and strongly oppose their demolition. This loyalty factor, combined with the higher costs of new construction, has spurred a flurry of activity in the renovation of midcentury modern high schools.

A Sprawling Sameness

Few of the high schools built for the baby boomers were based on a master plan for accommodating their communities' growth. As urban sprawl transformed sleepy suburban towns into thriving cities, high schools responded by adding more classroom wings, usually constructed as cost-effectively as possible. Each population growth spurt meant a new addition, resulting in a sprawling patchwork of



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Designed for Flexibility

Although midcentury modern high schools seem hopelessly outdated to the casual observer, they have the potential for openness and flexibility that makes them ideal candidates for renovation. Their architecture, for example, features post-and-beam construction that eliminates the bulky support walls prevalent in schools of the early 20th century. This structure also makes it easier to knock down walls and reconfigure rooms during a renovation.

Moreover, the midcentury modern aesthetic made ample use of windows and open floor plans to free up interior spaces, all of which are common in present-day design.

Still, substantive renovation of any building more than 50 years old requires updating its infrastructure,

which can be challenging for a variety of reasons. Because midcentury modern high schools were built to be “tight” with little room between floors, retrofitting air-conditioning and ventilation systems can be a difficult process that involves changes to ceiling heights or floor levels.

These buildings also have inadequate plumbing, electrical, and technology features, which typically need to be entirely replaced. They lack thermal windows, and re-estimation can be a lengthy and expensive process. The massive size of older schools adds to the difficulty and costs of such projects. For example, when it opened in 1959, Willowbrook High School in Illinois had 436 rooms, 294 miles of wiring, and 33 miles of conduit, all of which had to be replaced during a recent renovation.

Although school districts have been vigilant about asbestos abatement for quite some time, it is not uncommon to encounter encapsulated asbestos-containing materials

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Left: A common trait shared by midcentury modern high schools is a lack of public spaces. A new expansive commons area at Willowbrook High School balances midcentury modern design principles with today’s pedagogical needs. This space will become an interactive student lounge that resembles a high-tech coffee shop with “hot spots” and large screens, which might show clips from the last football game or rehearsal “trailers” for the spring musical. Right: Educators today think “outside the classroom” much more than they did 50 years ago. Therefore, the renovation at Willowbrook High School added a technology-enriched lounge for socializing and collaborative learning.

during a major renovation. Removing hazardous materials affects project schedules and increases costs.

Rebooting the Architecture

Renovations of Addison Trail, Naperville Central, and Willowbrook High Schools in Illinois involved a “reboot” of the existing architecture into alignment with current educational requirements. A primary goal was to reconfigure spaces in ways that would contribute to students’ learning and the vitality of campus life.

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Classrooms were designed to take advantage of the open, flexible floor plans, giving teachers more options for multimodal learning activities and the ability to quickly change a room’s setup from one period to the next. They can move and recombine furniture to create spaces for small-group projects, remedial tutoring, and even contemplative work. The architecture complements and enhances the educational experience; form and function are in harmony.

The reboot also embraces a centuries-old education concept that is once again in fashion: providing spaces for social or informal learning. These spaces are the nerve center of the school’s community and are re-created wherever possible.

At Naperville Central, an outdoor courtyard is being converted into a three-story skylighted atrium with a new commons, cafeteria, and



Top: The renovations at Addison Trail High School were envisioned as a reboot of the existing architecture into alignment with current educational requirements. Spaces were reconfigured in ways that would contribute to students’ learning and the vitality of campus life, and classrooms were designed to take advantage of the open, flexible floor plans. **Bottom:** The reboot of Addison Trail High School embraces a centuries-old educational concept of providing spaces for social or informal learning, a “nerve” of the school’s community.

kitchen. Suffused in natural light, this new, centrally located addition will be a gathering place for students and faculty and a hub for extracurricular activities. At Willowbrook, a lobby will become an interactive student lounge that resembles a high-tech coffee shop with “hot spots” and large screens, which might show clips from the last football game or rehearsal “trailers” for the spring musical. At Addison Trail, the area between the lobby and cafeteria

(which will be more like a bistro than the traditional mess hall) will be transformed into a two-story atrium featuring a mall of student services. For all three projects, the social learning idea is being reinvigorated with elements of modern design.

Sustainability Benefits

Sustainability is a prime consideration for all school building projects, and the decision to renovate a high school rather than raze it demon-



The renovations at Naperville Central High School include sustainable elements, including the use of bioswales, rain gardens, and, to a limited extent, green roofs, which enable the school to capture water for irrigation.

strates a commitment to preserving resources. As we've seen, the design of midcentury modern schools is well suited for renovations. An important but often overlooked consideration for such projects is the use of storm

water, which should be viewed as an asset rather than a waste product. The three projects described here, for example, include the use of bioswales, rain gardens, and, to a limited extent, green roofs, which

enable the schools to capture water for irrigation.

These and other sustainable design features can also be integrated into the curriculum as living laboratories. Biology classes can study native plantings; physics students might explore renewable energy sources, such as solar voltaics; and chemists can examine the efficacy of water filtration systems. Such hands-on experiences are more likely to engage students while giving them a deeper understanding of the subject matter.

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Striking a Chord

Midcentury modern high schools still strike resonant emotional chords in the collective consciousness of their communities. Renovation projects have the potential to educate young adults for many years to come. In fact, by rebooting a school's architecture (and technology) to align with modern pedagogy and providing more opportunities for social learning, we can make it better than ever.

With the right renovations, these buildings can be extraordinary learning environments, well suited to the 21st-century students.

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