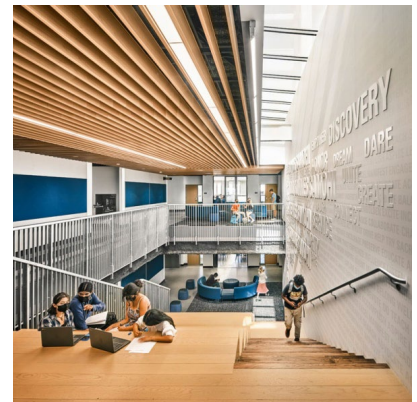


## A Santa Monica high school has movable walls to accommodate new ways of learning

Kids don't do school the way they used to, and buildings are evolving to reflect that—and to adapt over time.

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Think about your high school for a second. Chances are you'll visualize a long corridor flanked by classrooms, each segmented into tidy rows of students facing the teacher. Increasingly, however, this setup is changing.

When two architecture firms discussed the design of a new five-story building for Santa Monica High School in Southern California, they were struck by the sheer diversity of its needs—including 31 classrooms, two science labs, rooms for students with medical needs, and an aquatic center, to name a few. They wondered how it would translate spatially. "Sounds like you need a loft building," John Dale, a principal at architecture firm HED, recalls telling the school administration at a meeting. Defined by open floor spaces and a lack of partitions, loft buildings are amenable to change, and that's exactly what was needed.

K-12 education is evolving rapidly. Project-based learning is replacing rigid lesson formats. Collaboration is replacing solo work. And as the pandemic continues to reshape education—with, for example, reconfigured layouts and more emphasis on circulation—schools have to flex for the ever-evolving, often unpredictable needs of their students and staff.

That's why the high school's new Discovery Building was designed using Open Building principles, which advocate for nimble structures that accommodate change. Think no columns, no load-bearing walls, and raised flooring, all of which allow for highly adaptable buildings that can stand the test of time and the unknowns that come with it.

Designed by two architecture firms, HED and Moore Ruble Yudell, the \$133 million Discovery Building opened in fall 2021. The U-shaped structure comes with a publicly accessible Olympic-size outdoor pool, a rooftop science classroom, and more than 260,000 square feet of varied program space. It wraps around an open-ended courtyard, where cascading stairs also act as an informal gathering

*Photos: Inessa Binenbaum/courtesy HED Architects/Moore Ruble Yudell*





space. Inside, the school's floor plates are deeper than usual, which gives classrooms more breathing room. Narrow corridors have given way to more spacious common areas that double as circulation spaces. And classrooms have grown by about a third, with movable furniture and folding glass walls that open to the common spaces.

But this is about more than double-duty spaces and flexible layouts. The Open Building movement calls for long-term adaptability embedded in the building process. "Each system has been designed to allow change to occur," says Dale, who also cofounded the Council on Open Building. The Discovery Building has a steel frame with no braces and no shear walls, so all internal walls can be moved if necessary. "The structure isn't a uniform grid but an accommodating grid that anticipates the different ways a building can live."



Throughout the building, raised flooring helps distribute air (meaning fewer ducts were needed), and plumbing and electrical systems are housed within. Mechanical systems, usually stacked on the roof, were distributed across the building so that the architects could free the roof and turn it into a learning environment. (Fun fact: The Hilton hotel next door has expressed interest in serving brunch there over the weekend, which could bring additional revenue to the school.)

With so much built-in flexibility and so few prescribed spaces, the Discovery Building could become an office complex, a laboratory, or even a housing structure in the future. (Though it most likely will remain educational). "The building has a loose fit, just like your favorite jacket," says James Mary O'Connor, a principal at Moore Ruble Yudell.



The Open Building concept was coined in the 1980s by John Habraken, a Dutch architect and educator who was struck by the rigidity of postwar housing. Now, as we learn to navigate the uncertainties presented by the pandemic, the Discovery Building architects believe the movement could gain momentum in the U.S.

And while the key aspect of open buildings is their flexibility, the concept could be good for the planet, too. "The more we build things and take them down in short periods of time, the more we are imposing on the carbon load of this planet," Dale says. Over the years, if buildings can change incrementally, without expending energy or wasting new materials to demolish or gut them, they can serve multiple purposes and, therefore, last longer.



This isn't to say that buildings can't adapt if they don't follow these principles. All over the country, abandoned warehouses and vacant buildings from the industrial era have been converted into mixed-use offices and housing. But when too much work needs to be done, the practice can be costly, and not every type of building can be transformed without completely gutting the interiors.

Instead of demolishing and obliterating the environment, open buildings would make adaptive reuse easier, and more affordable. "Think of downtown L.A., where all the fabric is almost intact and it's all been reused and reinvented," Dale says. "We want the kind of buildings that we design with Open Building principles to do that too."

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