BUSINESS

A Blueprint for Green Buildings Struggles to Catch On

Architecture group AIA has lofty goals for putting up energy-efficient structures. Much work remains.

By Russell Gold | Photographs by Michal Czerwonka for The Wall Street Journal
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The American Institute of Architects has for years challenged its members to design buildings to combat climate change, setting a goal to hit "net zero" edifices by 2030.

The architects have a ways to go. Last year, 27 of the 19,000 building-design firms owned by AIA members reported meeting their annual mark. That figure was an improvement: 16 firms met targets the year before, and 11 the year before that.

Buildings generate a surprisingly large share of the greenhouse gases that contribute to climate change. About 40% of annual emissions in the U.S. come from heating, lighting, cooling and constructing buildings, according to the AIA.

The architects learned a lesson when trying to meet their green challenge, one that applies broadly to industrywide efforts to address climate change: Customers have to want the products first.

"The architecture profession tends to give what the client asks for and the vast majority of clients aren't asking" for green

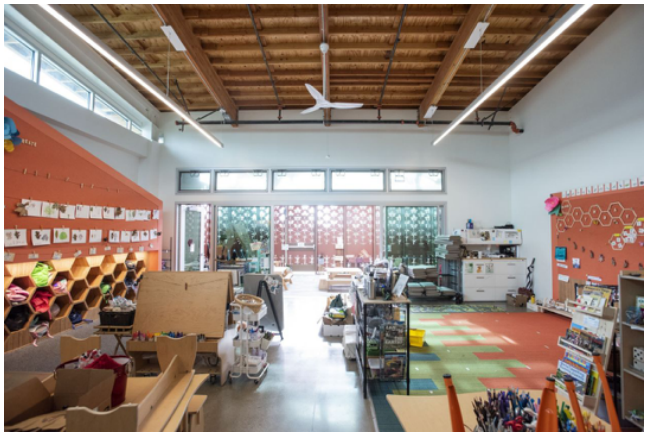
structures, said Mike Fowler, a senior associate at Mithun Inc., a Seattle-based architecture firm that was among the few to hit the mark. Mithun always presents at least one energy-efficient design option to clients and works to educate them on climate benefits and potential cost savings, he said.

Not all clients are interested. One thing that can scare away clients is that few contractors have experience on high-performance buildings, and those that do say they can cost 2% to 3% more than regular construction, according to Passive House Institute US Inc., a nonprofit organization that promotes high-performance buildings.

Architects know how to build very efficient buildings, and use heat pumps and solar panels to reduce net energy consumption, said Christoph Reinhart, director of the Building Technology Program at the Massachusetts Institute of Technology School of Architecture and Planning.

“We have off-the-shelf technologies to do this,” he said. The payback on energy-efficiency investments, such as extra insulation and solar panels, is usually about seven years, longer than most commercial investors are willing to wait, according to building designers and developers.

The AIA began to confront the climate impact of its work more than 15 years ago, after a 2003 cover story in the magazine Metropolis titled “Architects Pollute” triggered a conversation. In 2009, the group adopted what it called a climate challenge to reduce the energy-usage footprint of its new buildings.



A classroom inside the Environmental Nature Center Preschool, designed by architecture firm LPA, in Newport Beach, Calif.

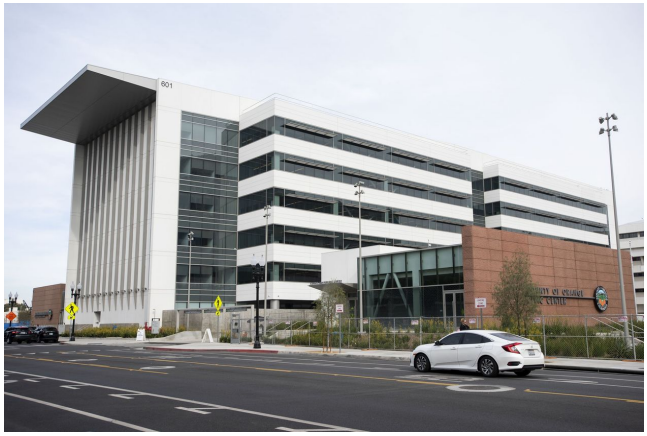
Last year, the campaign called for a 70% reduction compared with a 2003 baseline. This year, the reduction ratchets up to 80% and is headed to net-zero buildings—structures that generate enough power to offset their consumption, usually by adding solar panels—by 2030.

Though the AIA is far short of meeting those targets, leaders of the group say it has made strides. Last year, more than 310 architecture firms reported energy-use data from more than 20,000 new- and renovated-building projects. Overall, the predicted energy savings were 49% versus the 2003 baseline.

"Change is hard," said Jane Frederick, a South Carolina architect and AIA immediate past president. Ms. Frederick made climate a central issue of her yearlong term. "I'm pleased that we're progressing. I would be happy if we were progressing faster," she said.

In addition to reticence from clients, the set-up of most architecture firms emerged as an obstacle. Typically, architects design a building and then bring in mechanical and civil engineers as consultants. Many firms meeting the climate challenge integrate engineering and architecture at the start of the design process.

"That traditional practice, I think, is broken and really can't address the issues that we need to in today's world," said Dan Heinfeld, president of Southern California-based architecture firm LPA Inc.



A Santa Ana, Calif., county-administration building designed by LPA, whose new projects used 70% less energy than comparable structures.

LPA and Mithun, which integrate engineering and energy modeling into their architecture, were the only two firms of more than 100 employees to meet the recent 70% energy-use reduction goal.

The AIA said its 2030 challenge has been valuable in creating a library

of high-efficiency buildings that others can learn from. The group has also moved into political advocacy, starting in 2018 to urge cities to adopt stricter building codes, including one that would compel new construction to include solar panels and other efficiency measures.

Others are pushing tenants and investors to raise their voices. Lotte Schlegel, executive director of the Institute for Market Transformation, a Washington, D.C., think tank that seeks to accelerate market demand for super-energy-efficient buildings, said there are three ways for green building practices to be widely adopted: "Tenants ask for it. Investors ask for it, or regulation requires it."

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