FOR THE LAST DECADE, American museums have been on a building binge. The "Bilbao effect" — the urgent desire to replicate the success of Frank Gehry's 1997 Guggenheim Museum in Spain — sent museum bigwigs scurrying to erect daring designs bearing the stamp of a big-name architect. But there are signs that the era of "starchitecture" is waning. The edgy old guard is giving way to a new generation of younger global architects — and the idea of what's hot is cooling down, as a more understated sensibility is emerging. In the past two months, two beautifully minimalist museums have opened: the Grand Rapids Art Museum designed by the Thai-born

Los Angeles-based Kulapat Yantrasast, 38; and the Museum of Contemporary Art in Denver by David Adjaye, 41, an acclaimed Tanzanian-born architect based in London. And in New York, the most anticipated design project is the New Museum, a contemporary-art institution, which will open its quietly stunning new home on Dec. 1.

Designed by the Tokyo firm SANAA, the New Museum shows off key traits of this new modesty. The firm, headed by Kazuyo Sejima and Ryue Nishizawa, was chosen because
the architects are “at the forefront of their generation, concerned with the same issues that preoccupy young artists working now,” said New Museum director Lisa Phillips. Through a deceptively simple design, they’ve shown their gift for wrestling creatively with a small budget (total cost: $50 million) and for addressing a tight urban site. Seven stories tall, the building ingeniously tweaks the notion of a conventional high-rise. It looks like boxes stacked a bit askew, which allows some daylight into the galleries from above. “It’s basically like a chest of drawers you pulled out,” says Florian Idenburg, SANAA’s project architect. SANAA’s buildings often project an ethereal lightness, such as its elliptical glass pavilion for the Toledo Museum of Art. At the New Museum, the firm shows it can be both tough and tender. With a 14-foot wall of glass fronting the street, the building seems to levitate, and the rest of the exterior is wrapped in a silvery aluminum mesh. Yet that mesh is the same lowly material as trash cans on the street—and the concrete floors indoors mimic the pavement just outside. (Such industrial materials were pioneered by Gehry as a younger architect.)

Upstairs, the museum’s galleries are airy, high-ceilinged and dead simple, the better to keep your attention on the art. Achieving this effect takes a designer’s sleight of hand; a lot of careful engineering hidden in the building’s core is holding up all those stacked boxes. Most dramatic is a long stairway that descends down a narrow slot from one gallery into another: it’s a gesture that seems monastic rather than showy. After years of museum designs that shout “Look at me!” the self-effacing elegance of the New Museum really does feel new.

—CATHLEEN MCGUIGAN