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How Terra Cotta is Undergoing a Modern Renaissance



NEW JERSEY-BASED COMPANY SHILDAN IMPORTS GERMAN-MADE TERRA COTTA FACADES FOR U.S. BUILDINGS. CREDIT: SHILDAN

By Patrick Sisson

At the corner of 28th Street and 7th Avenue in New York's Chelsea neighborhood, a new 12-story building sits right at the intersection of classic and artisanal design and a modular, machine-made future. The facade's materials, a grid of obsidian and glass, offer monumental gravitas and the sheen of a sports car. A boutique office building designed by Skidmore, Owings & Merrill ([SOM](#)), [28&7](#) showcases the new appeal of one of the oldest building materials: terra cotta.

SOM partner Chris Cooper, FAIA, describes the use of black glazed terra cotta as akin to "modern artisanal" design. Despite a modular system of manufacturing and hanging, the custom pieces, glazed hollow tiles shaped just so to reflect the sunlight coming off of panes of glass laid out in a grid framework, offered a homemade, custom feel.

"It's historic, with a modern twist," Cooper says. "It's highly customizable and machinable, but still has depth and texture in resonance. We need to move beyond the all-glass building."

Terra cotta's recent renaissance isn't brand new, but a few decades of slowly expanding manufacturing capacity, changing design trends, and evolving material concerns have made it much more in demand for commercial, residential and industrial applications. In New York alone, towers such as 363 Lafayette, designed by [Morris Adjmi Architects](#), and One Vanderbilt by [Kohn Pedersen Fox](#) — as well as a fire station by Studio Gang accented in [candy apple red clay tiles](#) — offer recent examples of the material's growing popularity.

Its resurgence isn't entirely unexpected. Donald Corner, a recently retired University of Oregon professor [who wrote a book about terra cotta](#), says the material has continually gone through cycles of reappraisal and rediscovery for millennia, especially during the turn of the 20th century when it graced and ornamented the skyscrapers that formed the modern American downtown.

But the creative and commercial potential of these slabs of baked clay have expanded significantly in recent years. Clients love terra cotta for its ability to communicate timelessness and strength—and how new machine-aided ways to shape, mold, hang, color, and display the material gives it a renewed flexibility. Colin Koop, AIA, another SOM architect and partner who has recently finished work on another terra cotta-clad project, Disney's new office in Hudson Square in Manhattan, says that using the material is akin to walking into a pottery studio and quickly learning the vast possibilities of the medium. Terra cotta also doesn't expand or contract with fluctuations in

temperature, helping to retain shapes and curves, and the panels are easily transportable, a selling point during supply chain logjams.

It's always been a material able to meet the moment, and now it offers a biophilic sensibility that fits a design world seeking more natural, sustainable options.

"It's more human and more beautiful," says Lada Kocherovsky, AIA, architect and principal at architecture and historic preservation firm [Page & Turnbull](#). "The slight inconsistencies in the finish make it more appealing to a lot of people. It can create stunning architectural expressions."

That appeal is heightened by the recent reappraisal taking place among architects and designers about how modernist glass-and-steel skyscrapers have terrible records of energy efficiency. In New York City, former mayor Bill de Blasio went so far as to [call for a ban on glass skyscrapers](#). Decarbonization targets and emissions reduction regulations in the city like [Local Law 97](#) will require a rethink of skin-and-bones modernist towers. Prescriptive code requirements limit glass to 40% of a building's facade, and NYC zoning provides incentives like [Zone Green](#) to keep façades highly insulated, strengthening the case for terra cotta.

"There's also a healthy dialogue that's going on all over the world about the nature of contextual realism, and what it means to build modern in a way that resonates with your surroundings," says SOM's Koop. The Walt Disney Company building, done in bronze and dusky green terra cotta with curved panels, was meant to reflect its surrounding architectural heritage without being too wedded to history.



TYKESON HALL AT THE UNIVERSITY OF OREGON, DESIGNED BY OFFICE 52 ARCHITECTURE, FEATURES AN EXTERIOR ARRAY OF PASTEL PLATES.

“When you're dealing and working in brick and masonry cities, which most of the American historic city courts are at their heart, terra cotta really offers an aesthetic option that is both modern and also classic.”

Early 20th century was a high point for terra cotta in American architecture, with the work of Louis Sullivan, Cass Gilbert and others unlocking a degree of creativity with ornamentation and handmade detail. Famous structures such as the Woolworth Building, the Potter Building, and the Wrigley Building, and more prosaic streetscapes such as Chicago's Terracotta Row, were adorned in the colored, baked clay, with [builders favoring the fireproof, mass-manufactured tiles](#).

Today's terra cotta—milled, extruded and machine-pressed through dies and hung on sunscreens or rainscreens in a modular fashion that requires thinner and less weighty pieces of baked clay—means it can be molded, colored and glazed in an expanding variety of creative shapes and colors, with firms like Shildan and Boston Valley Terra Cotta specializing in custom shapes and molding. The curved exterior of the MAAT Museum of London, designed by London's AL_A, speaks to the visual potential of terra

cotta, while Tykeson Hall at the University of Oregon by [Office 52 Architecture](#) features an exterior array of vibrant pastel plates that mimic the sunset skyline.

Thomas Schultz, an associate at The Architectural Team in Massachusetts who used terra cotta for the exterior of the [100 Shawmut](#) condo building in Boston, says designers can also use terra cotta panels that are essentially a half tile and not a full depth extrusion, saving cost and making it more practical to support on larger building facades. It's also more sustainable than metal-and-glass facade systems (though the ultimate impact, of lack thereof, can vary considerably due to how far the material is shipped and the energy used to power the kilns).

Much of the modern reappraisal and resurgence of terra cotta can be traced back to architect Thomas Herzog who, as a professor in Germany in the '80s, conceived of a system to hang terra cotta panels that was first used in 1985. Roughly a decade later, Renzo Piano's work on the masterplan for Potsdamer Platz in Berlin in 1994, which included striking terra cotta facades, pushed the concept forward in a much-publicized fashion and, according to Corner, catalyzed substantial advances in manufacturing technology. Slowly but surely, the concept spread and became embraced by more and more architects.

Shildan, based in New Jersey, was founded in 1998 by Moshe Steinmetz to import German-made terra cotta facades for U.S. buildings. It was slow going until a handful of high-profile projects, such as Kohn Pedersen Fox's design of the Stephen M. Ross School of Business building at the University of Michigan, clad in terra cotta and finished in 2015, began making the system and material more well-known.

Steinmetz says the production process is much cleaner than one may assume. Agricultural land is lifted so the clay underneath can be extracted, and then set down once again. The raw clay is then taken to a factory where it is extruded through dies, shaped almost like Play-doh, and then heated, colored, and glazed. Making standard shapes has become so automated that the first human hand to touch a tile does so at the job site; machines make, finish, and package the pieces on the factory floor. Demand has been rapidly growing, and Steinmetz sees it doubling in the next few years, especially for more custom designs.

As terra cotta becomes more widely used for new commercial and residential buildings, its qualities are becoming more apparent to real estate developers and other industry players. Insurance companies are pushing fire-resistant materials, especially after

London's Grenfell Fire, while institutional clients like the low maintenance costs and ease of upkeep.

"It's fired earth, right?" says Rocky Berg, principal at Three Living Architecture in Dallas. "Think about the terra cotta warriors found in China. It's a really old idea, and we've only gotten better by adding oxides to make it stronger."

It's that durability, and the projection of durability, that has made it a much easier sell for new projects (a [nearly 330-foot-tall timber tower](#) planned for a city in Switzerland will boast terra cotta facades). It's often as simple as finding an example right down the block.

"You have to understand that it is actually a very durable and reliable option," says Cooper. "We can simply point to a 100-year-old building next door and look at the terra cotta still standing."