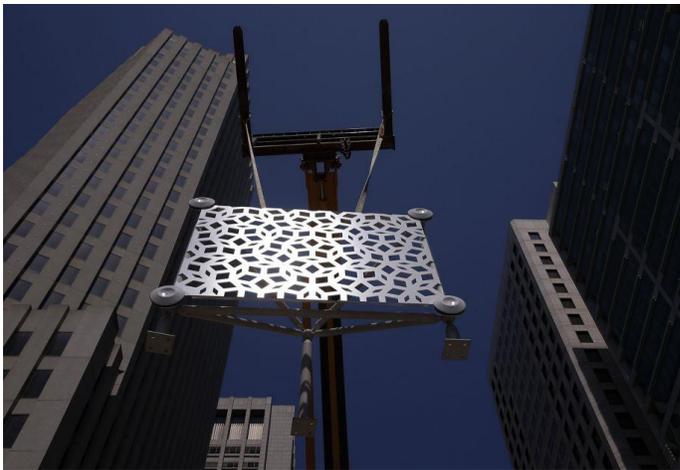


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## S.F. gets 1st glimpse at new Transbay center's skin

By John King



The panel dangling from a forklift is 6 by 6 feet, aluminum punched by angled perforations in a not-quite-abstract pattern. It wears three coats of white paint. Flecks of mica add a hint of sheen.

It's one panel — and the final version — of the 4,486 that next spring will begin to cloak San Francisco's new quarter-mile-long Transbay Transit Center. Right now that structure is a slow-growing frame of steel columns and beams. By late 2017 it should be open for business.

"This is a single panel. The next step will be to fabricate and connect 18 of them" as a test of how multiple panels look side by side, said Darin Cook a senior associate principal at Pelli Clarke Pelli Architects. "This will give us a chance to look at every detail before the fabricators go hog wild."

Cook's firm designed the Transbay Transit Center being erected south of Mission Street between Beale and Second streets. It's a truly massive project with a budget that has grown from \$1.2 billion in 2007 to \$2 billion as of last month. That's just the first phase, the ground-floor arcade and second-level bus terminal and rooftop park. The cost to extend commuter trains and high-speed rail to the terminal's basement could hit \$4 billion.

But look past the big numbers. Small details are what will determine whether the terminal-to-be is an icon or an eyesore — details like the shimmering precision of the undulating outer skin, which is why the approved panel was fussed with for months. And why the architects are doing what they can to keep the station's outer layers from being dumbed down as costs rise, driven in large part by the inflationary pressures of an overheated construction boom.

From glass to metal

“It’s always an issue,” said Fred Clarke, a principal of the Connecticut architecture firm selected for the project in 2007. “The elements you touch and feel and experience are the last ones you order.”

When the firm was chosen to design the terminal by the Transbay Joint Powers Authority, the conceptual design resembled a line of enormous, sleek spiders skinned in ultra-clear glass. By 2010, the form had smoothed out and the glass had acquired a cloudy pattern to filter sunlight.



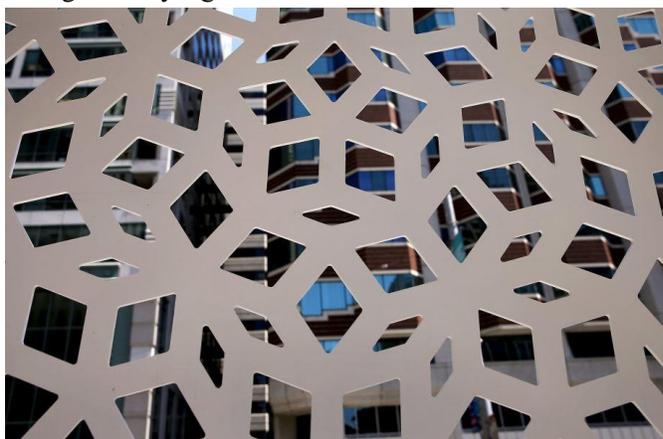
Three years later, the glass gave way to perforated metal — partly for security reasons, but also to trim \$17 million or so from the budget. The pattern of crystal-like openings was taken from the work of Oxford University’s Roger Penrose, a mathematical physicist; it can be extended as an undulating collage that doesn’t need to fit together exactly, but won’t look like thousands of individual pieces. Another decision was to cover the metal in paint, rather than simply go with a polished or grainy finish.

What didn’t work

One bare test panel of stainless steel leans against a shaded wall in the Howard Street parking lot next to the project’s construction office, and its glum, gray tone confirms the wisdom of bright, white paint. Other test panels stand nearby, wrong turns along the way. The paint on one has too little mica; that’s fine for a single panel, but the effect en masse would be monotonous. Another test panel was rejected by Penrose himself: The physicist didn’t like that the perforations were soft curves instead of sharp cuts, which Clarke admits was done partly to reduce the cost per panel.

The approved panel, dangling from the forklift to catch variations of light, is the first full-scale example of the approved pattern and the approved paint, with its iridescence reminiscent of a sports car. The aluminum also is the approved depth of one-quarter inch.

“We tested three-sixteenths of an inch, but that was too thin,” Cook said. “We needed something thick enough to stay rigid across the surface.”



Another recent change was the switch to a design-build contract for the outer wall. This has allowed Pelli Clarke Pelli to work with Indiana-based Crown Corr to find ways to streamline the production process.

Collaboration

“We can only go so far as architects in designing a building. This allows us to work

directly with the subcontractor to fine-tune details,” Clarke said. “We set the end goal, and they show us how to get there” within budget.

(For instance: the frame beneath the perforated panels will consist of standardized parts that then can be assembled like Tinkertoys. The earlier schemes were customized and continuous.)

And then there are the changes made to satisfy not the budget, but the bureaucrats. That’s why the veil of perforated metal — in essence, the outer wall — isn’t called a wall. It’s officially an awning, albeit a vertical one that would extend 3,100 feet if stretched end to end.

“It’s a way of describing it to the San Francisco Building Department’s satisfaction,” Clarke explained. “The (undulating) design cantilevers over the sidewalk. A wall can’t do that, legally and technically. An awning can.”