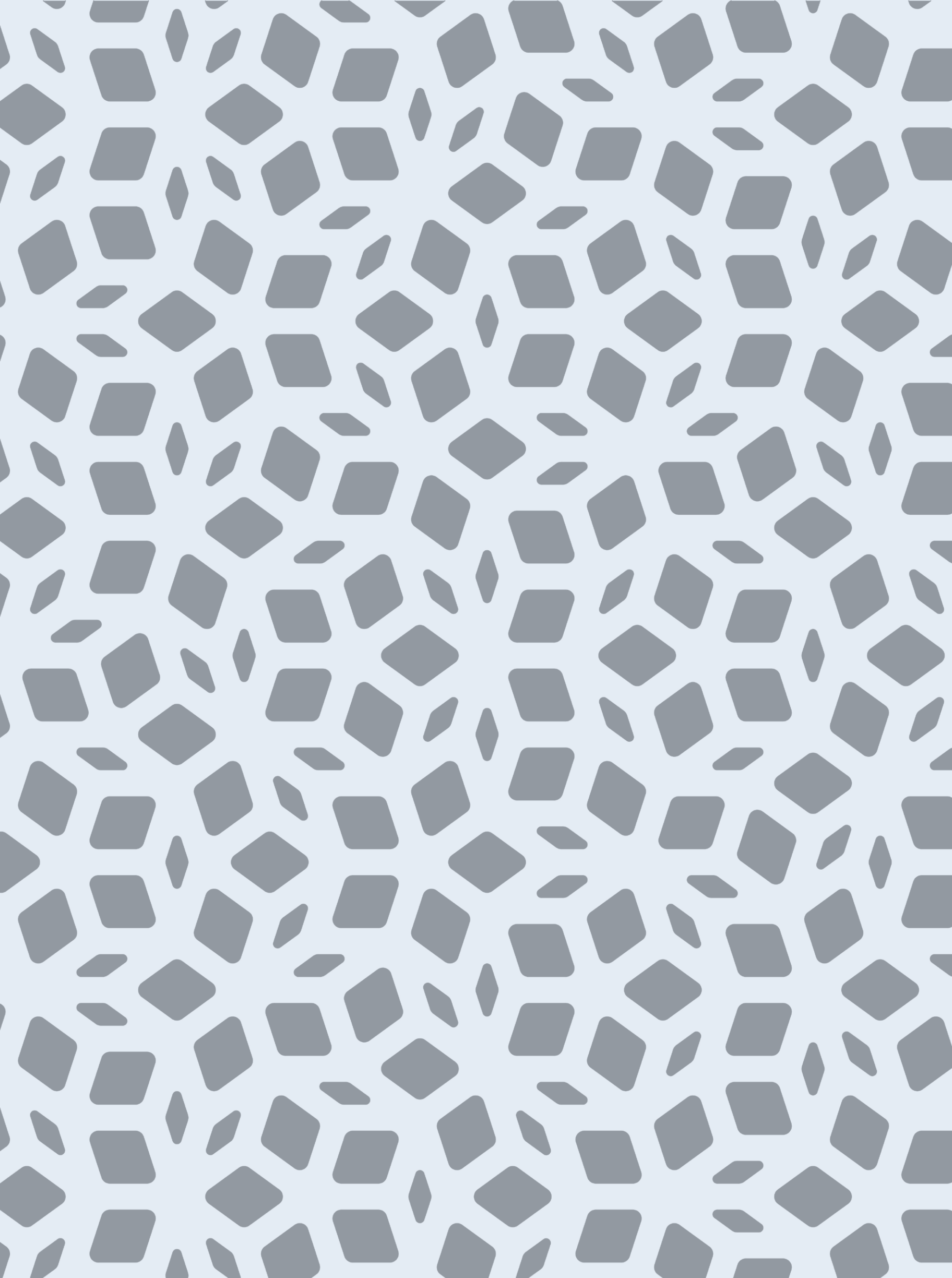


# TRANSBAY TRANSIT CENTER PENROSE ENCLOSURE

Pelli Clarke Pelli Architects





# OVERVIEW

## TRANSBAY TRANSIT CENTER

The Transbay Transit Center will provide a modern, state-of-the-art transit hub for downtown San Francisco. The new facility will draw together modes of public and private transportation, creating a grand entry point to the city in the spirit of the great stations of the world. The building's design is highly accessible, sustainable, and attractive, with a 5.4-acre public rooftop Park, grand light-filled spaces, and a unique glass and steel façade. The new Transit Center will spur development in the surrounding city blocks, anchoring the growth of a new residential mixed-use urban neighborhood.

Eight counties in the Bay Area and the state will be linked by eleven transit systems: Muni, AC Transit, Greyhound, WestCat, SamTrans, Caltrain, Golden Gate Transit, Bart, ParaTransit, Amtrak shuttle bus service, and, in the future, California High Speed Rail. There is also the possibility of a connection to Amtrak's Coast Daylight train line. In addition, there will be ample accommodation for bicyclists and taxis. By 2030, Transbay is expected to serve up to 45 million people annually.

## PENROSE ENCLOSURE

The Transbay Joint Powers Authority (TJPA) has received approval from Dr. Roger Penrose, the eminent British mathematical physicist, to incorporate his groundbreaking geometrical pattern in the design of the exterior walls of the future Transbay Transit Center (TTC) designed by Pelli Clarke Pelli Architects (PCPA). Dr. Penrose and PCPA are working in tandem to incorporate Dr. Penrose's elegant design, known as the Penrose Rhombus Tiling, in the skin of the TTC. The design is remarkably simple but unique because it can be extended infinitely without repeating itself. The Penrose system is ideal for the perforations in the metal panels that will form the curved exterior of the Transit Center.

Discovered in 1974, the Penrose Rhombus Tiling was heralded by mathematicians and physicists ultimately helping to give birth to the new field of quasicrystals which spawned discoveries in material science and biology. Dr. Penrose's discovery initially yielded designs that were only known to exist in synthetic materials. Patterns similar to Dr. Penrose's design, however, have recently been found in natural materials such as those in meteorites. The rhombus pattern can be elegant and beautiful to the eye. When used at the scale of the new Transit Center, it creates a delicate, lace-like screen that is an ideal contrast to the monumental structure of the Transit Center. PCPA notes that the Penrose pattern on the exterior of the building will symbolize the interconnections among mathematics, science and art which are so deeply ingrained in the rich, technologically advanced culture of the Bay Area.

The Transbay Transit Center will be the focus of a new neighborhood for San Francisco and a destination for retail, art, community, and cultural activities. The building must be not only an excellent and well-functioning transit center, but also a friendly place that people want to use and be near.

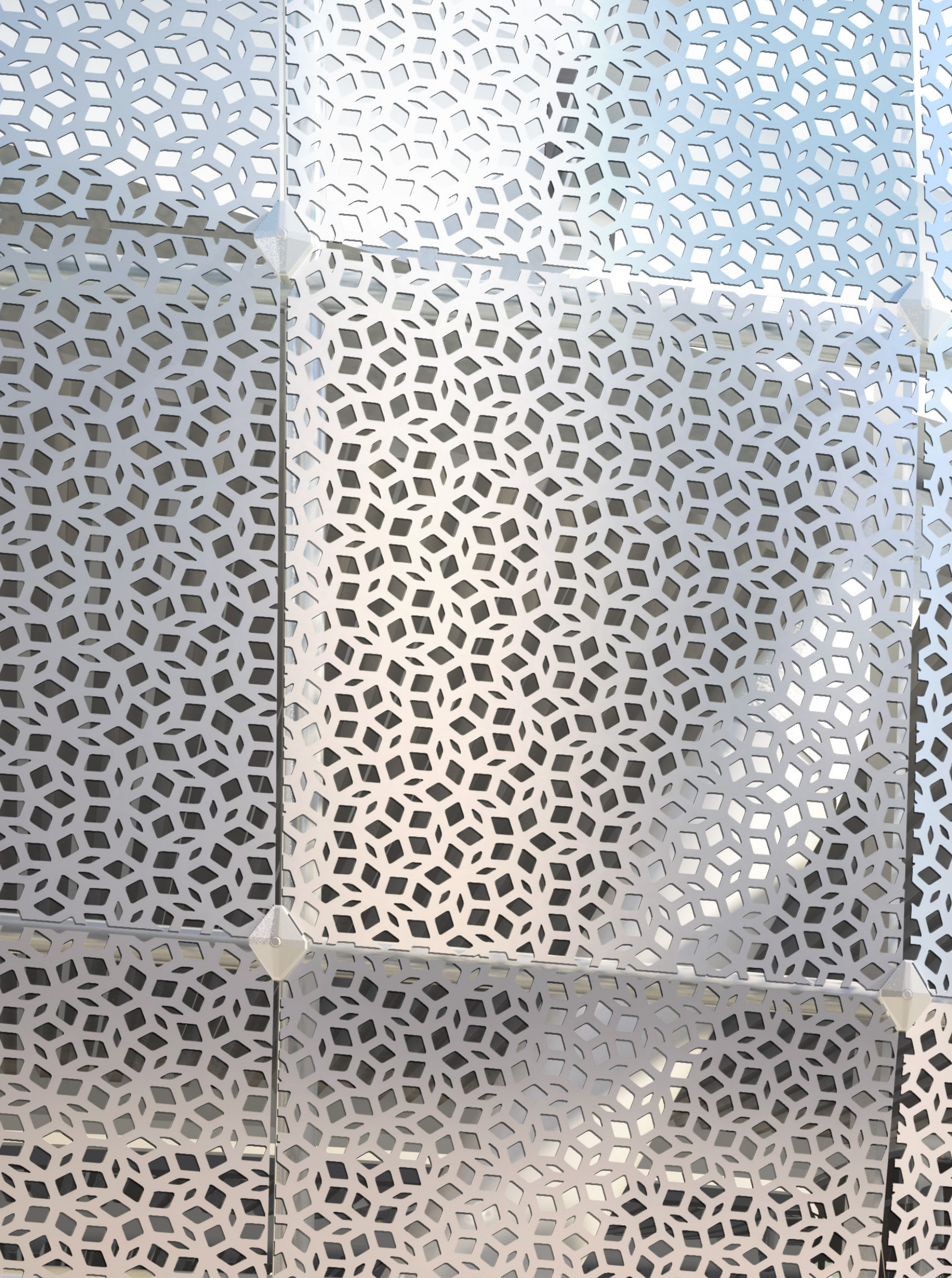
The building's design is graceful, luminous, welcoming, and safe. Its undulating metal exterior wall with forms like the petals of a flower and perforated with a beautiful pattern created by the British mathematical physicist, Dr. Roger Penrose, is shaped to reduce the scale of this very large structure. On the interior, the building is suffused with natural light. "Light Columns" bring natural light deep into the building, creating a cheerful, healthful atmosphere. The largest Light Column forms the central element of the 120-foot tall Grand Hall, Transbay's primary space. From the Lower Concourse rail platforms to the top floor Bus Level, the Transit Center and the Park is open, light-filled, and accessible.

The Transbay Transit Center is scheduled to be complete in the fall of 2017.

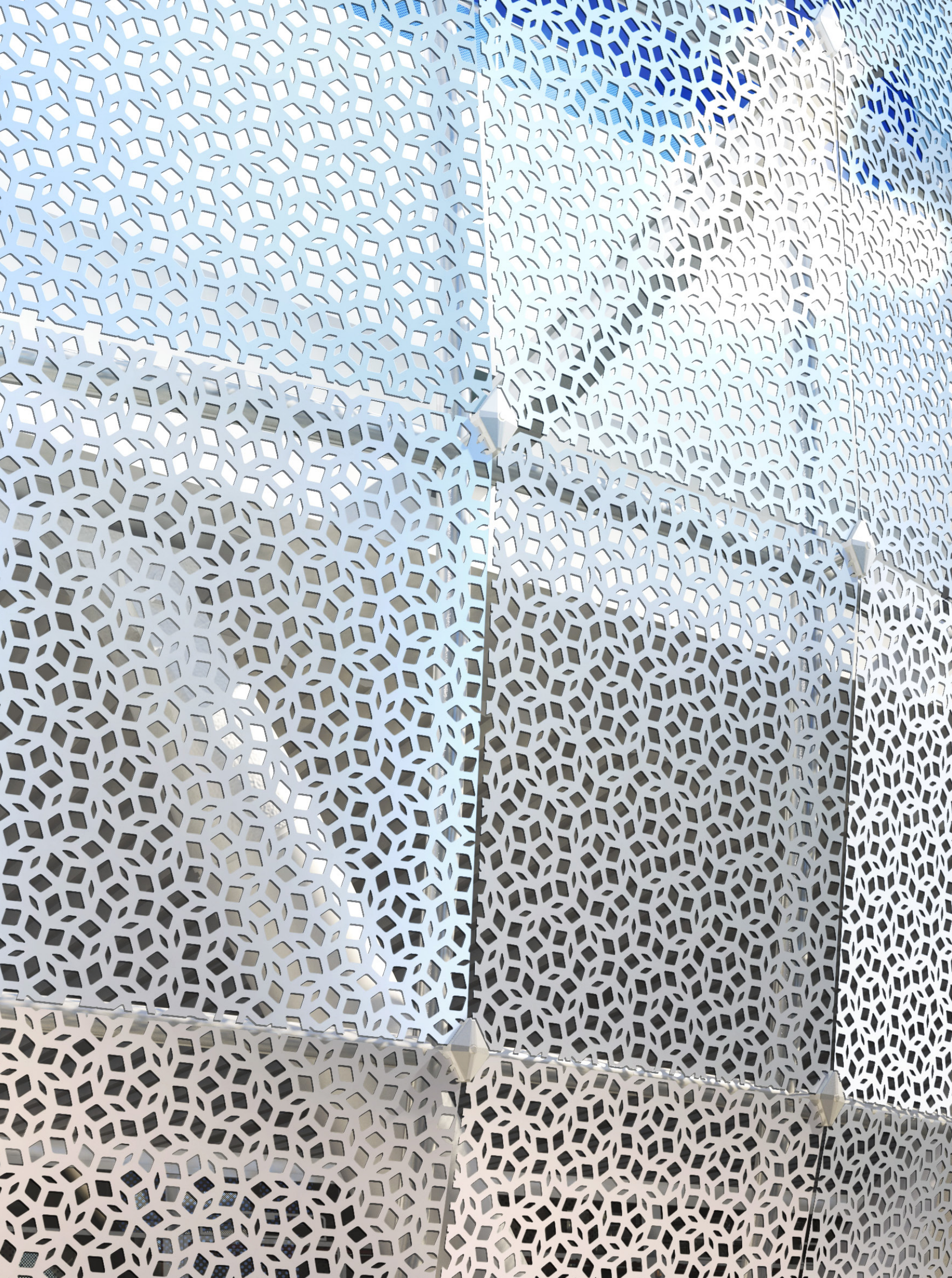
Sir Roger Penrose is a British mathematical physicist and philosopher. Over the course of his career, Penrose has worked and collaborated with great minds such as Stephen Hawking and M.C. Escher. In 1988, Penrose and Stephen Hawking were both awarded the Wolf Prize for their contributions to the understanding of the universe. Penrose developed the famous "Penrose Triangle" which Escher used in much of his artwork, including his piece The Waterfall in 1961. He is currently the Emeritus Rouse Ball Professor of Mathematics at the Mathematical Institute of Oxford as well as an Emeritus Fellow of Wadham College.

The pearlescent white metal skin of the Transit Center will be perforated with the Penrose pattern, letting 35 percent of the wall surface remain open to light and air. The aperiodic nature of the elegant geometric Penrose pattern successfully resolves the edge transitions from trapezoidal panels to panels. The passenger experience from the inside will be one of openness and diffused light.











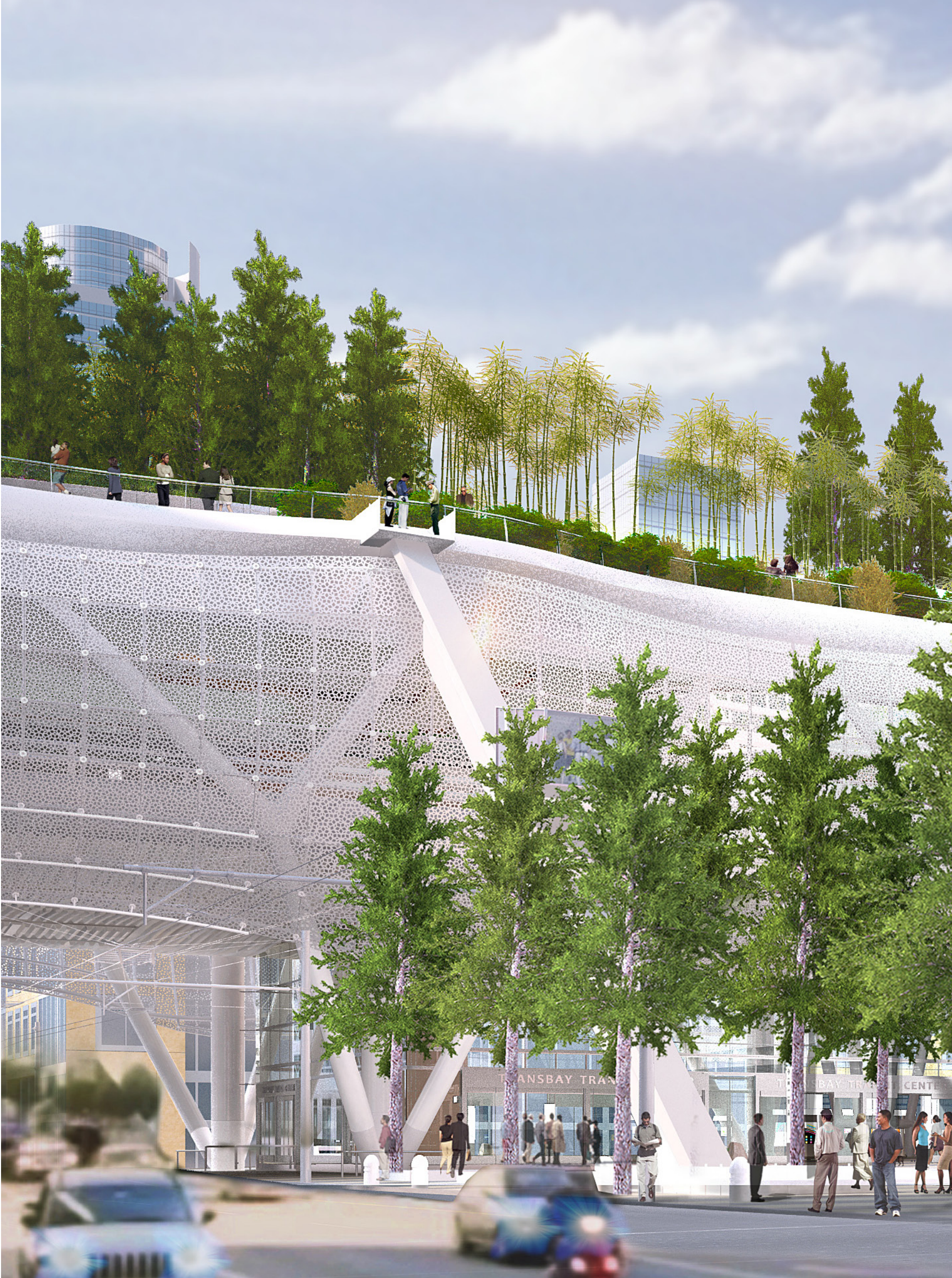






VIEW FROM FIRST STREET





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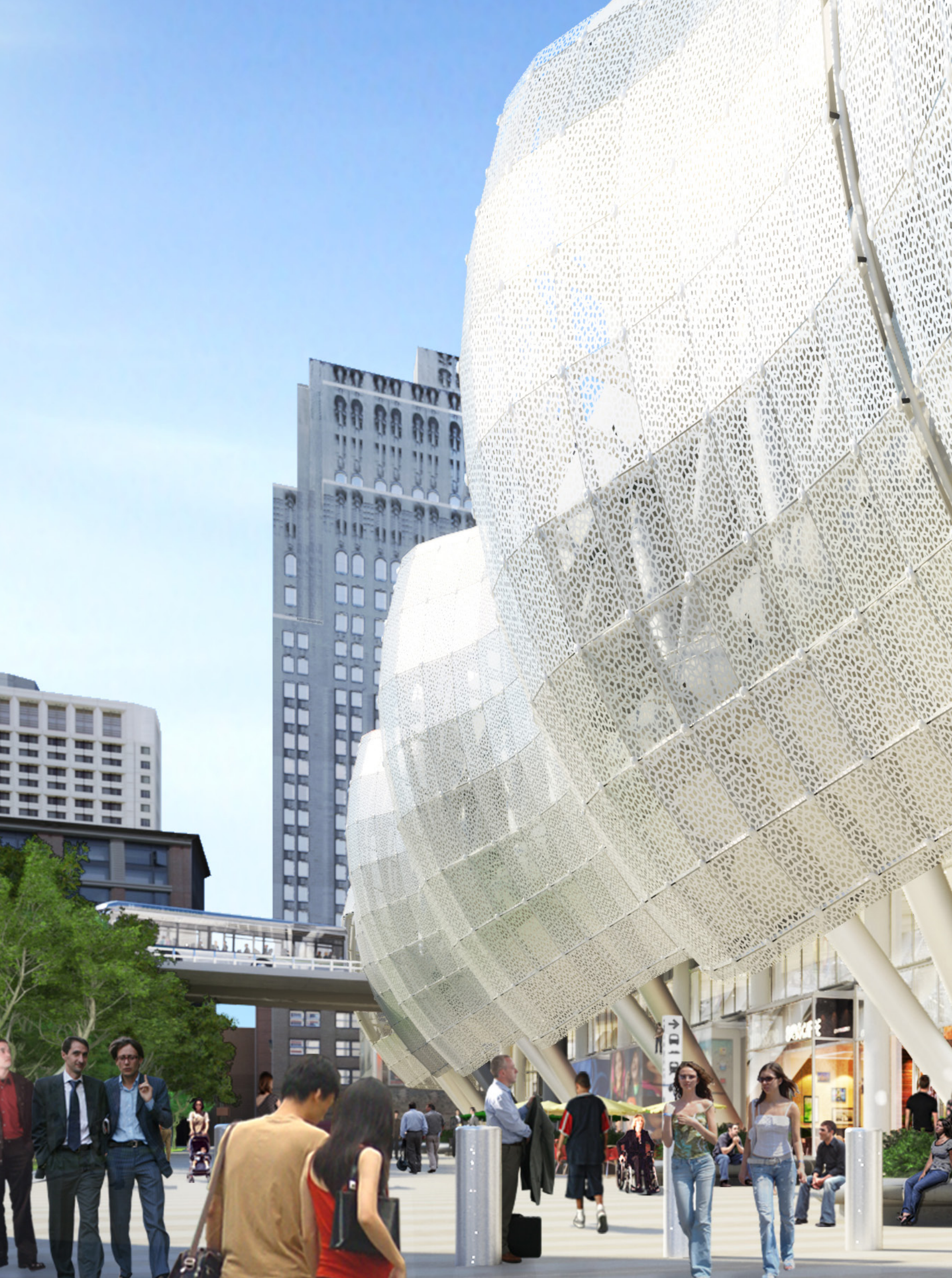
BAY TRAI CENTER





**VIEW FROM MISSION SQUARE**







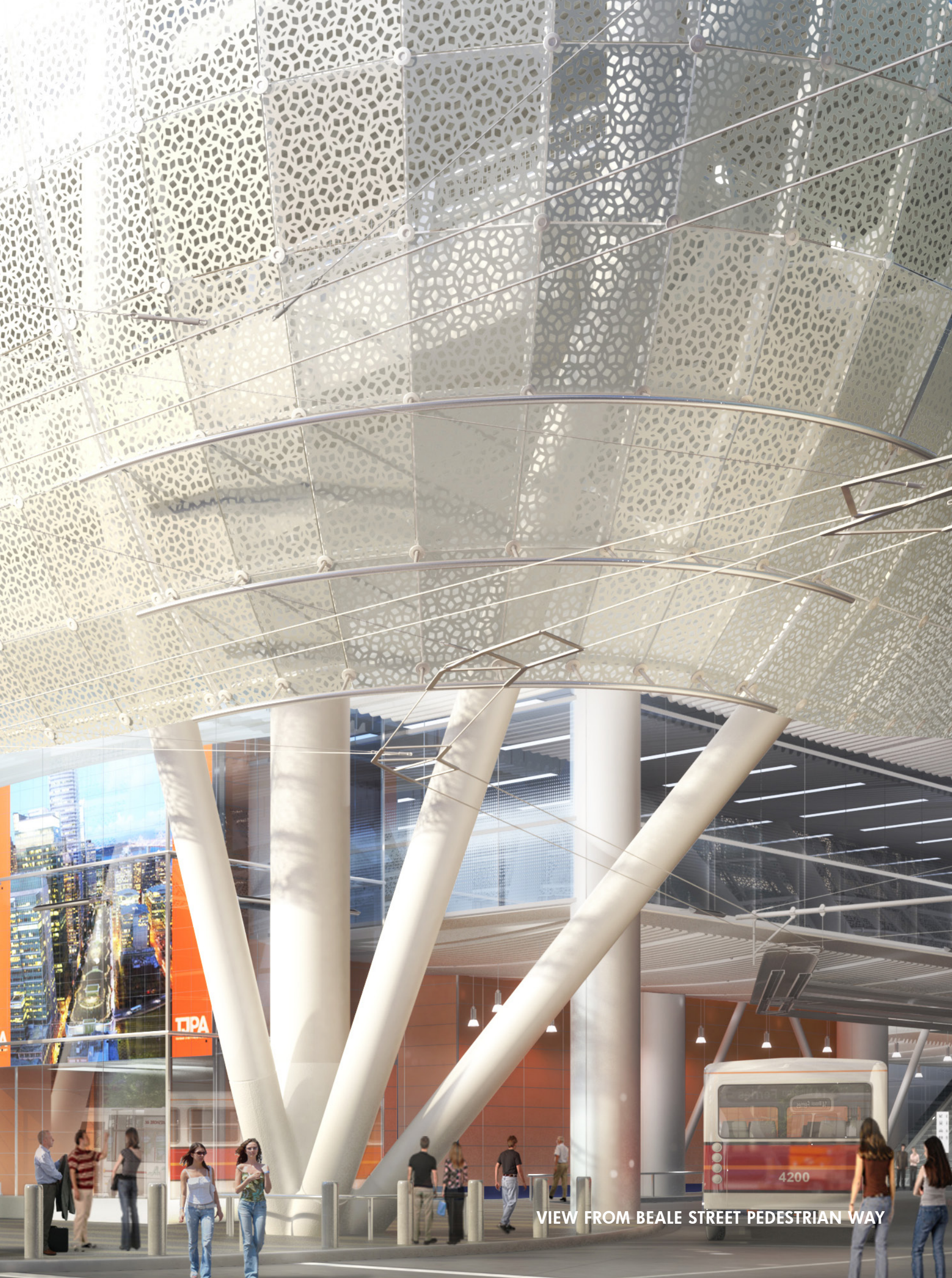


VIEW FROM NATOMA STREET PEDESTRIAN WAY









VIEW FROM BEALE STREET PEDESTRIAN WAY









WEST END OF NATOMA PEDESTRIAN WAY AT DUSK





Park

Bus Level

Street

NATOMA STREET

WAITING AREA

LIGHT COLUMN

Lower Concourse



RETAIL

Train Platform



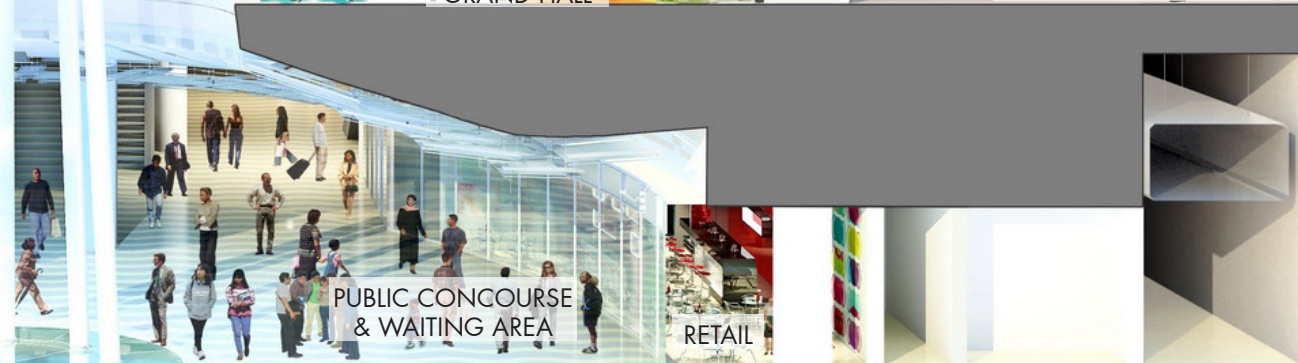
CALTRAIN PLATFORM





GRAND HALL

MISSION SQUARE



PUBLIC CONCOURSE & WAITING AREA

RETAIL



CALIFORNIA HIGH-SPEED RAIL PLATFORM

CALIFORNIA HIGH-SPEED RAIL PLATFORM









GRAND HALL VIEW OF LIGHT COLUMN





GRAND HALL VIEW UP TO BUS DECK AND PARK





GRAND HALL VIEW FROM ESCALATORS









NIGHT AERIAL VIEW



**TRANSBAY**  
TRANSIT CENTER  
SAN FRANCISCO

**TJPA**

TRANSBAY JOINT POWERS AUTHORITY

**Pelli Clarke Pelli** Architects