National Winner
US $100M and above

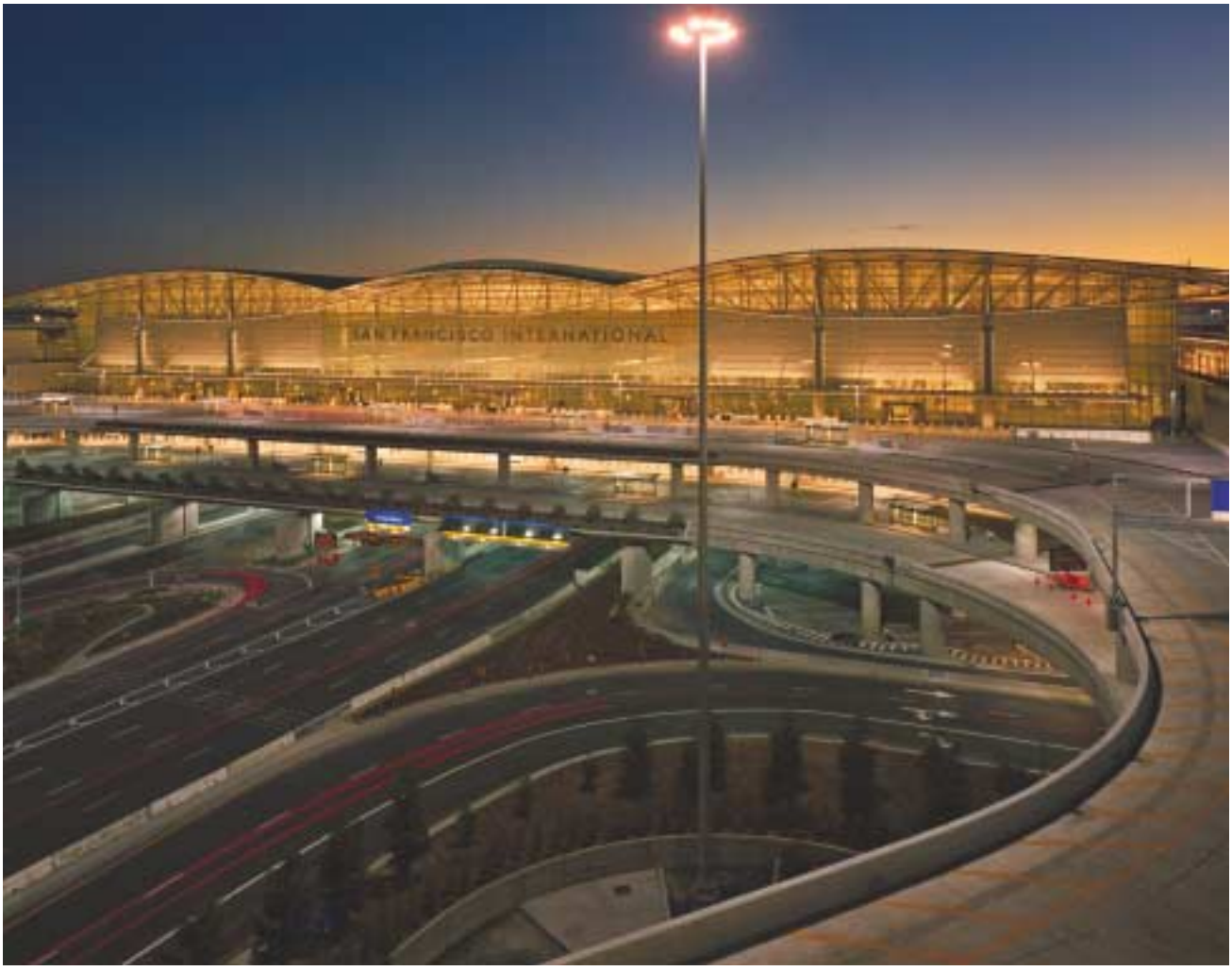
NEW INTERNATIONAL TERMINAL

San Francisco, CA

JUROR'S COMMENTS

The design is both an elegant and compelling reception hall that accentuates its purpose as transportation gateway. The innovative roof structure is a delightful metaphor to flight and aircraft.

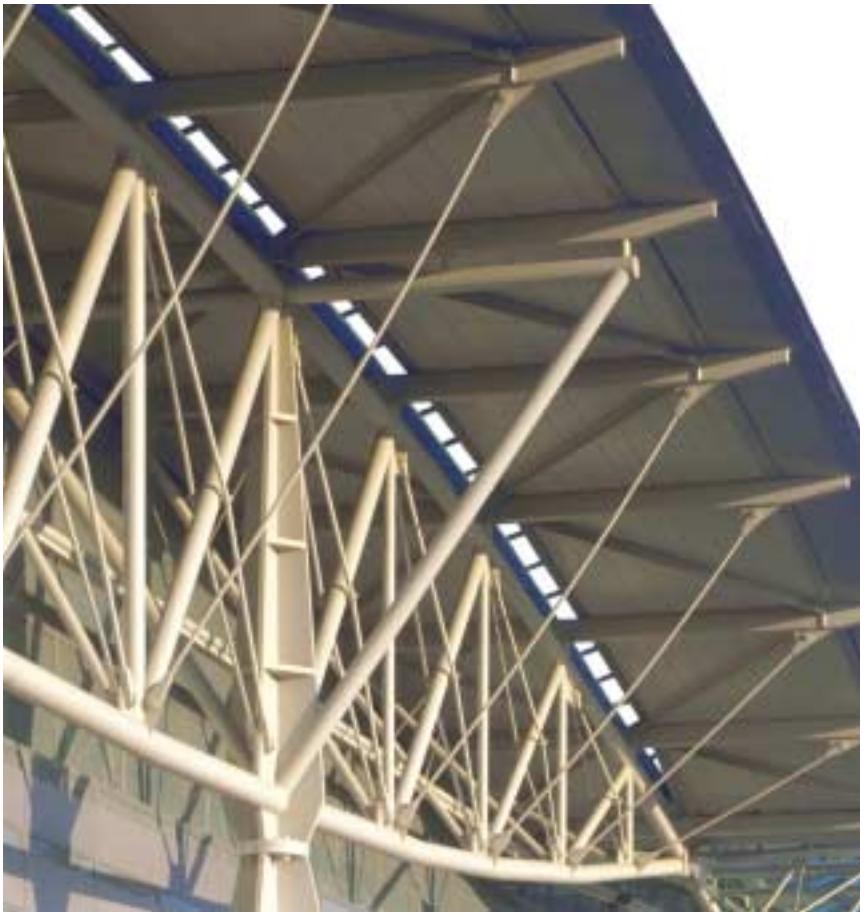
The new International Terminal Building (ITB) is the centerpiece of the airport's $2.6 billion expansion and modernization program. Its completion greatly increases the efficiency and capacity of all international arrivals and departures with 26 new gates and maintains the city's standing as America's gateway to the Pacific Rim. The roof structure and main façade of the terminal, visible from approaching roadways and the air, give the entire airport a visual cohesiveness and an iconic sense of identity, both as a major public facility and as the city's front door to the world.



The terminal's five-story vertical organization presents a model for other urban airports with limited buildable land. The form of the building reflects the need to span existing entry and exit roadways that run under the terminal. It was a significant accomplishment to keep these roadways 100% operational during construction. The Main ITB is supported by two sets of up to 29′ deep cantilever trusses, which, in turn, support a central third set of trusses. Together, the trusses span 380′ at their center and 160′ at each end with an overall roof span of 860′.

At the Main ITB Departure's Hall—700′ long, 200′ wide, and up to 83′ high—the exposed structural steel elements are brought to a majestic integration of functional, architectural and structural design requirements through the use of natural light from all sides, contrasted with civic art and the use of natural materials of glass, wood, terrazzo, stainless steel and filtering trees. At night, the Hall becomes a simple lantern with a single clear overall symbolic identity with an interior aesthetic of exposed structure of high-lighted details like that of a great cathedral. The space creates a dramatic departure point for travelers, but it does so with an economy of material and form.

At a total construction cost of $840 million, the Main ITB consists of an in-



tegrated and innovative creative solution to complex project requirements and constraints. Framed in structural steel, the structure includes 1.8 million sq. ft. of framed steel area (25,200 tons), 172,000 sq. ft. of exposed trussed steel roof (4,040 tons including main roof cantilevered box columns) and 760 tons of exposed steel at Main ITB departure's level window walls and entrance canopy. The careful implementation and use of simple technology in the design allowed the structure to transform itself above expected levels of practice. The exposed steel trusses utilize state-of-the-art steel tubular T-Y-K joint detailing and fabrication techniques of trusses sitting on spherical ball-joints atop 20 cantilevered concrete filled steel box columns. The center spans are interconnected by "cast steel" pinned joint assemblies, and the top and bottom truss chords are made from straight segments for economy while achieving overall curved aesthetic forms covered by a 4-1/2" deep exposed steel acoustical roof deck.

The airport's seismic performance goal of continued operation following a major earthquake is achieved using a strategy of seismic base isolation. The isolation system utilizes 267 friction-pendulum "cast steel" base isolators, installed at the foot of each structural column, which allow up to 20" lateral displacement. The seismic design of the new international terminal, with its long spans and tall curtain walls, is a milestone. With more than 1.2 million sq. ft. of floor space and more than 22 million cubic feet of interior volume, the terminal is the largest base-isolated building in the world. While the use of seismic isolation achieved superior seismic performance goals, the significant reduction in force levels allowed the overall architectural vision to take place in the Main ITB Departure's Hall roof and window wall.

PROJECT TEAM

ARCHITECT:
Skidmore, Owings & Merrill LLP,
San Francisco

Del Campo & Maru, San Francisco

Michael Willis Architects, San Francisco

OWNER:
Airports Commission,
City and County of San Francisco

STRUCTURAL ENGINEER:
Skidmore, Owings & Merrill LLP,
San Francisco

STEEL FABRICATOR:
The Herrick Corporation AISC member), Pleasanton, CA South Shoulder, 2/3 of isolated area & roof infill

PDM Strocal, Stockton, CA North Shoulder & 1/2 of isolated area

Nesco-XKT, Mare Island, CA
Roof Trusses

Canron. Vancouver, Canada
Curtainwall

STEEL ERECTOR:
The Herrick Corporation (AISC member), Pleasanton, CA
South Shoulder & Isolated Area

PDM Strocal (AISC & NEA members), Stockton, CA
North Shoulder

STEEL DETAILER:
Cal-West (NISD member), Pleasaton, CA
South Milestone 1

Baseline (NISD member),
Toronto, Canada
South Milestone 2

Candraft (NISD member),
Vancouver, Canada
North Milestone 1 & 2

Hargrave (NISD member), Dallas, TX
Areas 8 & 10

Lannon & Associates, Grapevine, TX
Area 9

NC Engineering (NISD member),
Vancouver, Canada
Roof & Curtainwall

GENERAL CONTRACTORS
(Joint Venture)**:**
Tudor Saliba, Perini Corp & Buckley & Company, Sylmar, CA

SOFTWARE:
SAP90, ETABS (v6.0), and 3DBASIS-ME

PHOTOGRAPHER:
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