

AECOM Technical Services, Inc.

**Progressive Design-Build on
Large-Scale Aviation Projects**

May 6, 2014

List of Projects

Project	Delivery	AECOM Role
San Jose – Terminal Area Improvement Program (TAIP)	Progressive Design-Build (PDB)	Lead Civil Designer/Mechanical Electrical Plumbing (MEP)
Sacramento - Big Build	Construction Manager at Risk (CMAR)	Project/Construction Manager (PM/CM)
San Diego - Green Build	Progressive Design-Build	PM/CM
Los Angeles – Tom Bradley International Terminal (TBIT)	CMAR	PM/CM
Los Angeles - CUP	Design-Build	PM/CM
Los Angeles – Terminal 4 Connector	Design-Build	PM/CM
San Francisco Terminal 3/BA"E"	Progressive Design-Build	Construction manager (CM) – Activation
Houston	Design-Build	PM/CM
San Francisco – Terminal 2	Progressive Design-Build	None
San Francisco – West Field Cargo	Progressive Design-Build	None
San Francisco – Terminal 3	Progressive Design-Build	CM - Special Systems

Similar Projects

**SAN – San Diego
International Airport**



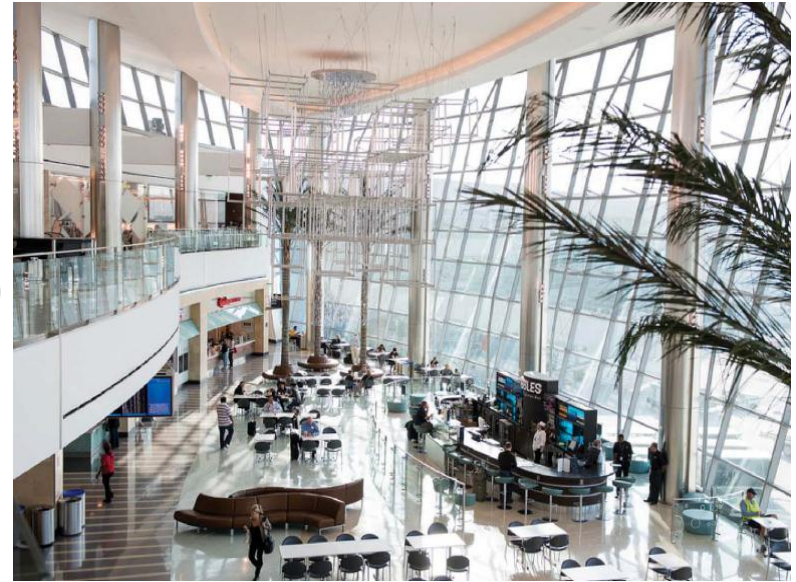
**SJC - Norman Y.
Mineta San Jose
International Airport**



**SFO – San Francisco
International Airport**

SAN - Program Overview

- Budget - \$864 million; Cost – Approx. \$820 million
- Schedule:
 - Design Builder Procurement: April 2009
 - Terminal Opening: August 2013
 - Phased Opening to Minimize Risk
- Progressive Design Build [Qualifications Based Selection]
- Program included 260,000 square foot (sf) expansion of existing terminal, 1.5 million sf new apron, New Baggage Handling System (BHS), 30 acre reconstruction of landside facilities including new parking lot, elevated departures roadway, outdoor check-in pavilions (2) and 15,000 sf United Service Organization (USO)/Parking Management Office (PMO) building.

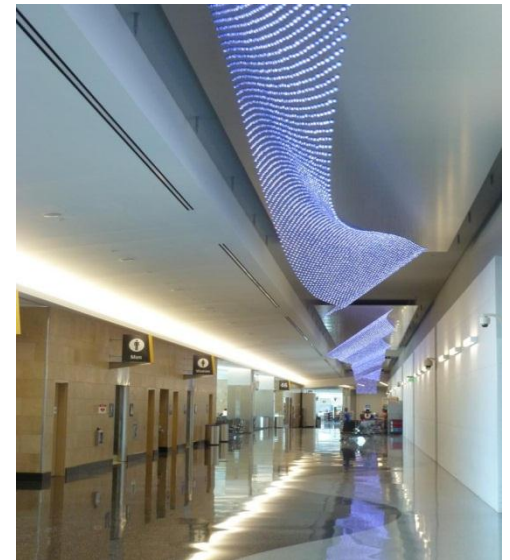


SAN – Key Characteristics/Similarities

- Evaluation of Delivery Methods
- First Design Build Project at SAN
- Schedule a key driver
- Quality very high priority
- Construction within ongoing airport operations
 - Terminal
 - Airside
 - Landside
- Numerous internal and external stakeholders
- Sustainability objectives
- Open Book – Cost Review/Accounting
- Project essential to competitive position of SDIA

SAN – Lessons Learned

- **Early and continued support from Policy and Decision Makers**
 - Board & Senior Management
- **Robust Communication, Collaboration and Partnering**
 - Program Definition
 - Streamlined decision making
- **Develop a Program Implementation Model**
 - Create stand alone Implementation Team
 - Empower staff
- **Establish an Affordable Budget**
 - Engage Finance and Accounting
 - GMP Collaboration
- **Develop a Realistic Schedule**
 - Achievable
 - Planning of Permits and Inspections
 - Phased opening



SAN – Results/Conclusions

- Progressive Design Build was the correct choice for the Green Build to achieve on-time, under budget and high-quality goals
- Progressive Design Build made it possible to overlap design and construction phases while shielding the Owner from the design risk often associated with a “fast track” schedule”
- Collaboration with the design-build team yielded high quality, yet cost effective solutions
- Having a consolidated team of designers and constructors on-site throughout the life of the project provided a high degree of flexibility to accommodate the inevitable changing needs of key stakeholders and the traveling public
- Open Book Accounting provided transparency needed to establish trust and determine value.



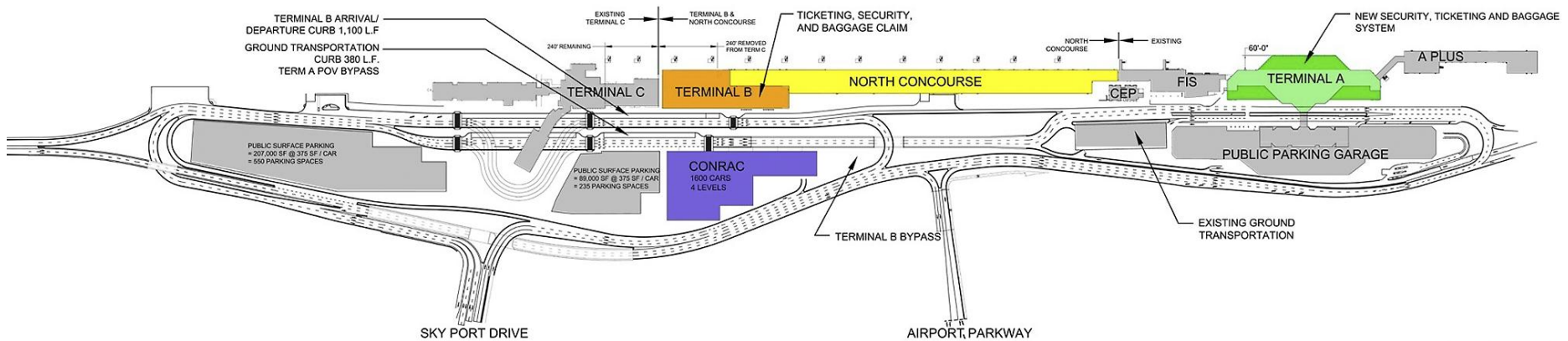
SJC – Program Overview

- Cost - \$668 million
- Schedule:
 - D/B Procurement: August 2006
 - Terminal Opening: June 2010
 - 6 Month Acceleration
- Delivery – Progressive Design-Build (QBS)
- Brief Description – New Terminal B, Renovate Terminal A, Landside Circulation Roads



SJC - Program Scope

- Temporary Terminal C and Future Removal (Dark Grey)
- Terminal B – Phase I (Orange)
- North Concourse (Yellow)
- Terminal A Modifications (Green)
- ConRAC (Purple) and Surface Parking (Green)
- Roadway and Overcrossings



SJC – Key Characteristics/Similarities

- First design build Project at SJC
- Terminal Upgrade & Expansion in a highly active terminal and constrained site
- Schedule and cost were drivers
- Many stakeholders (airlines, TSA/CBP, FAA, users, City of San Jose, Tenants)
- Much Needed Terminal Upgrade – community and airlines wanted improvements

SJC – Lessons Learned

- Co-Location of Team drives:
 - Heightened communications and expedited decision making
 - A necessary partnering environment
- Stakeholder involvement “key” in making timely and sound decisions
- Transparency through regular reporting to council and stakeholders
- Transfer to a GMP once owner is comfortable with design development

SJC – Results/Conclusions

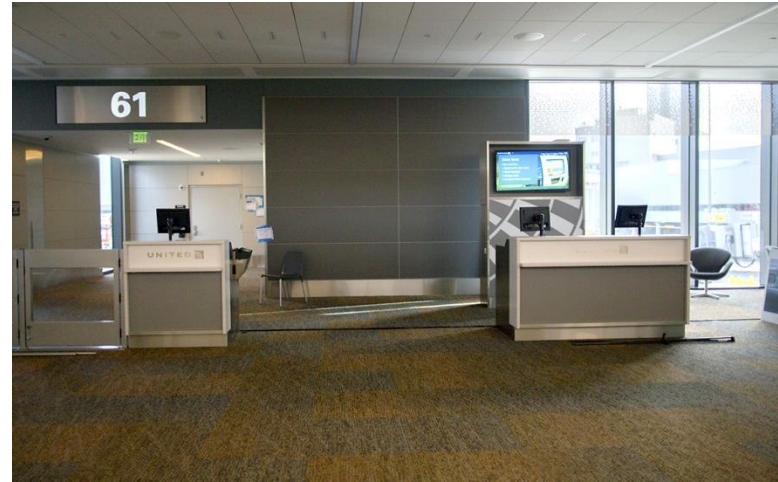
- PDB afforded SJC the ability to
 - Meet schedule & budget constraints
 - Foresee and plan for change
 - Reduce complexity and costs of working in a constrained site
- Results in a smaller Owner Management Team – reduces Owner's costs
- Contractor (not the Owner) must work with designer to quickly resolve issues



SFO – Program Overview

- Cost - \$138 million
- Schedule:
 - DB Procurement: May 2010
 - Terminal Opening: January 2014
- Delivery – Progressive Design-Build (Qualifications & Price Factors)
- Brief Description – Renovation and upgrade of 10-Gate Boarding Area “E”

SFO – Program Overview



SFO – Key Characteristics/Similarities

- Progressive Design Build using price factors and qualifications for selection
- Numerous Stakeholders (United Airlines, TSA, users and maintainers personnel, tenants)
- Maintenance of operations on a constrained site
- Compressed schedule
- Much needed terminal upgrade

SFO – Lessons Learned

- Partnering and a collaborative process yields the best PDB results
- Focused management of the stakeholder engagement process is critical to success
- Team did a good job of building contingency into the cost model; more contingency should have been built into the schedule
- Allow adequate time for all activation activities, including public events/opening ceremonies
- Create a structured onboarding process for subcontractors, concession contractors and vendors for site access

SFO – Results/Conclusions

- The Airport's Commitment to develop World Class Facilities through a "Hospitality" approach to customer service
- Deliver Exceptional Project Outcomes (EPO)
- Develop Programs that meets all Stakeholder Requirements
- Become an Agency of Choice for Designers and Builders
- Attract Highly Qualified Designers & Builders
- Create an Environment of Collaboration
- Develop a Partnered Approach to Issue Resolution & Problem Solving
- Promote Creativity & Innovation