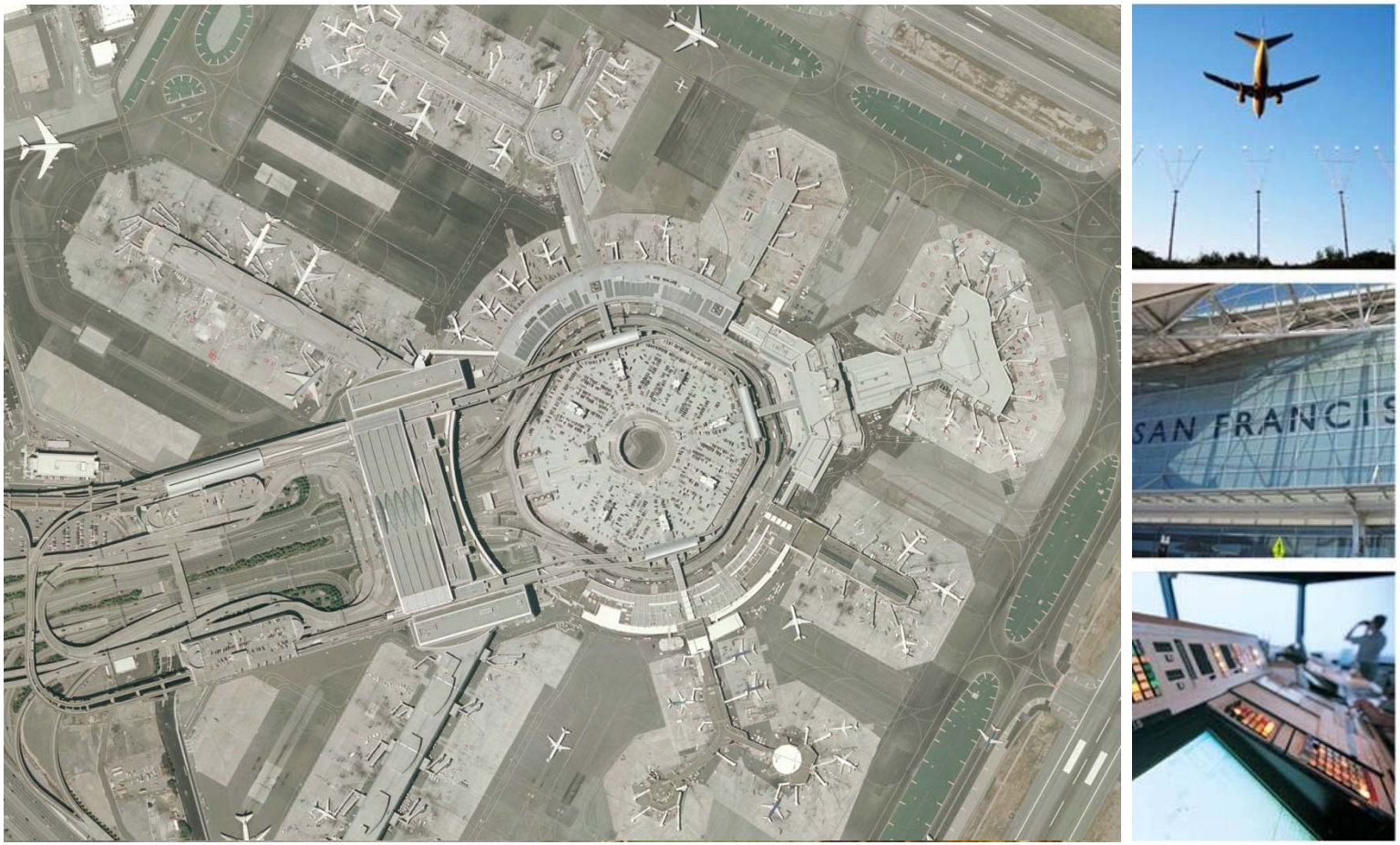


San Francisco Arts Commission Civic Design Review

February 13, 2012

San Francisco International Airport
Replacement Airport Traffic Control Tower and FAA / Airport Integrated Facility

HNTB

SFO San Francisco International Airport

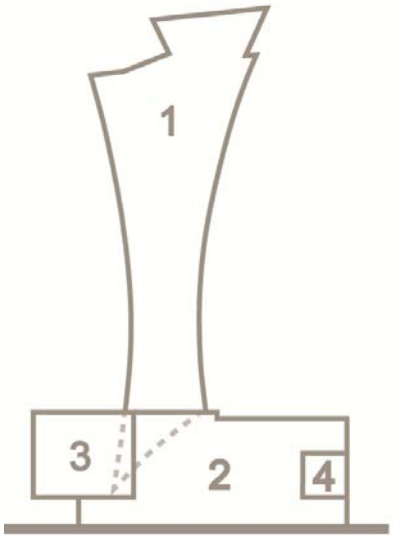
Project Definition

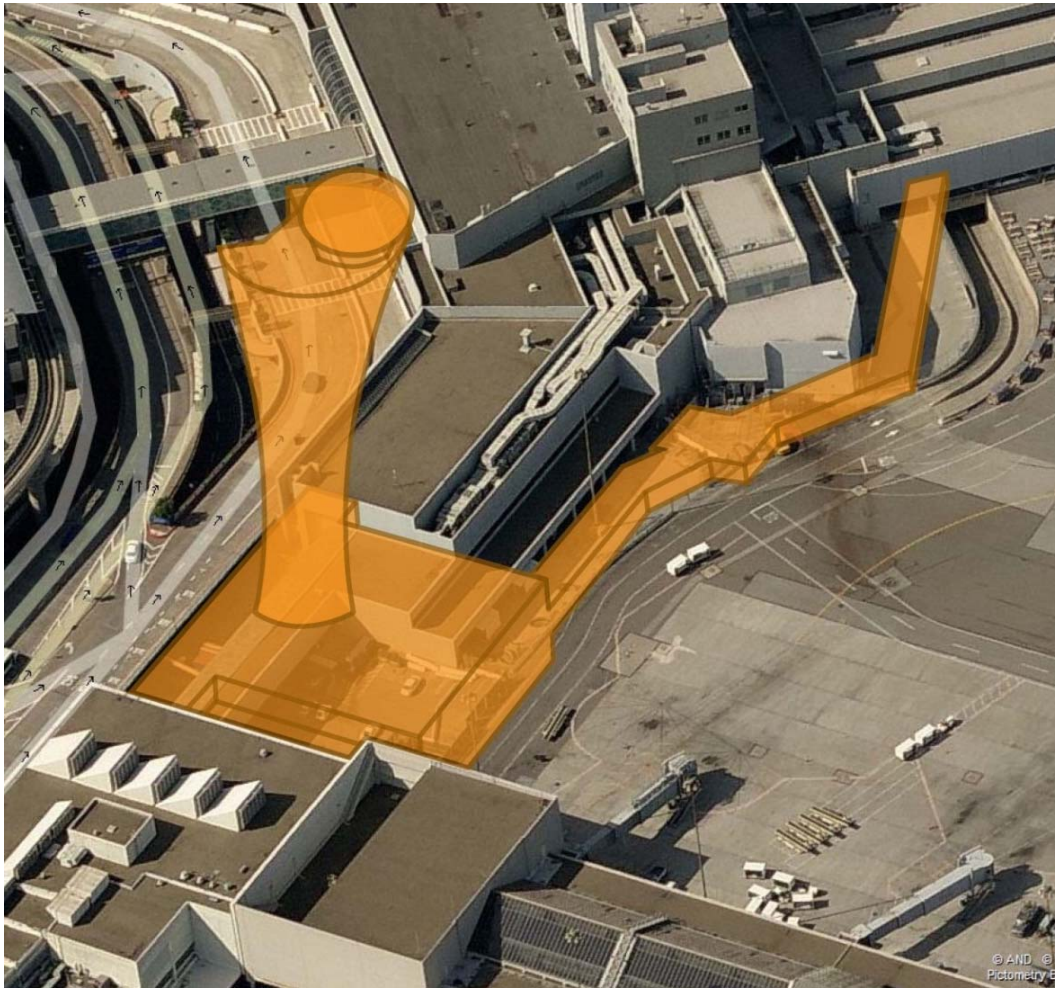
- New Airport Traffic Control Tower to replace the existing structurally deficient tower to meet seismic design requirements and other current FAA safety and security design standards
- New FAA tower base facilities to support the new tower
- Replacement non-secure corridor between Terminal 1 and Terminal 2
- Secure connector to allow passengers to walk between Terminal 1 and Terminal 2 boarding areas without exiting and going back through a security checkpoint

Existing Airport Traffic Control Tower to be replaced

New Building Elements

1. **Airport Traffic Control Tower** (**ATCT**) to replace the existing ATCT
2. **Integrated Facility** base building that includes FAA and Airport functions
3. **Non-secure Corridor** for passengers circulating between Terminals 1 and 2
4. **Secure Connector** for passengers circulating between Terminal 1 and 2 boarding areas



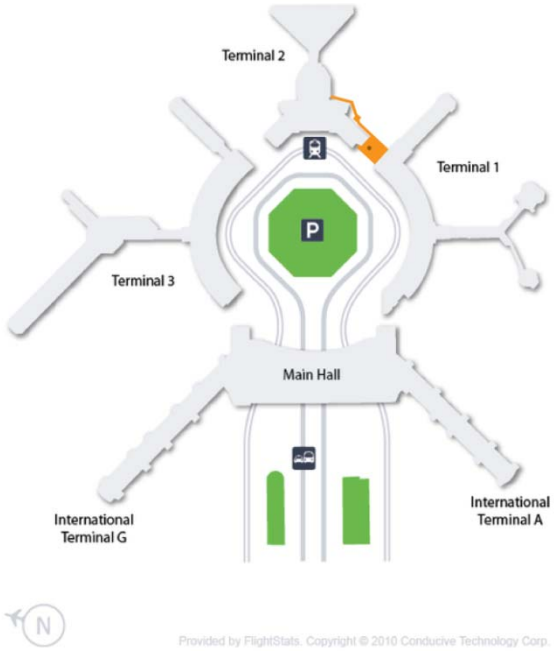


Project Overview

Project Location

Courtyard 2 between Terminals 1 and 2 is the required location for the new tower because of specific functional and operational requirements.

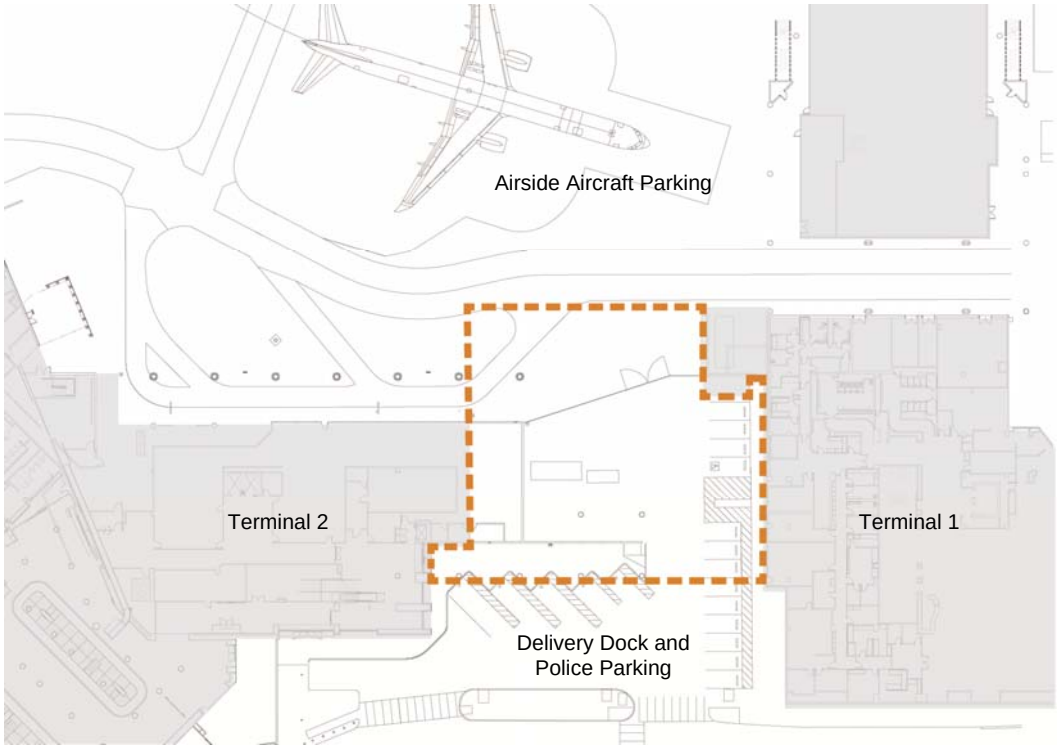
- Optimal airfield views from the tower cab
- Sufficient area to accommodate the base building administrative and Airport functions
- Landside and airside access to the FAA facility



Project Overview

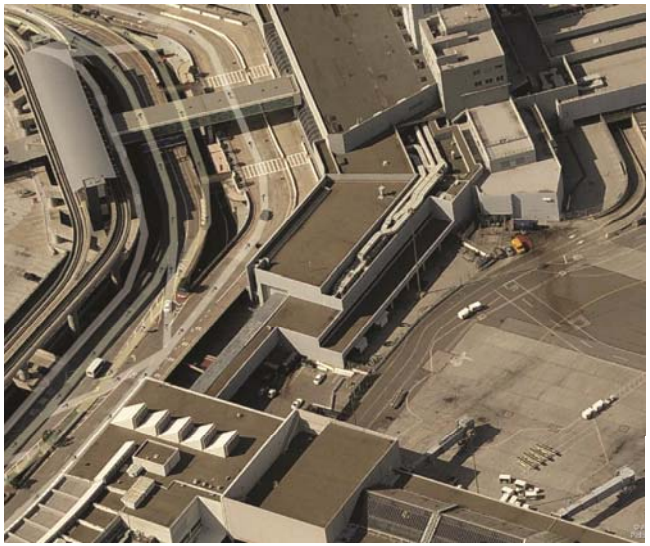
Project Site Constraints

- Project bounded by existing landside roadways, airside aircraft parking, Terminal 1 and Terminal 2
- Existing police parking and delivery dock for Terminals 1 and 2 to be maintained



Level 1 Existing Site Plan

Existing Landside Roadway



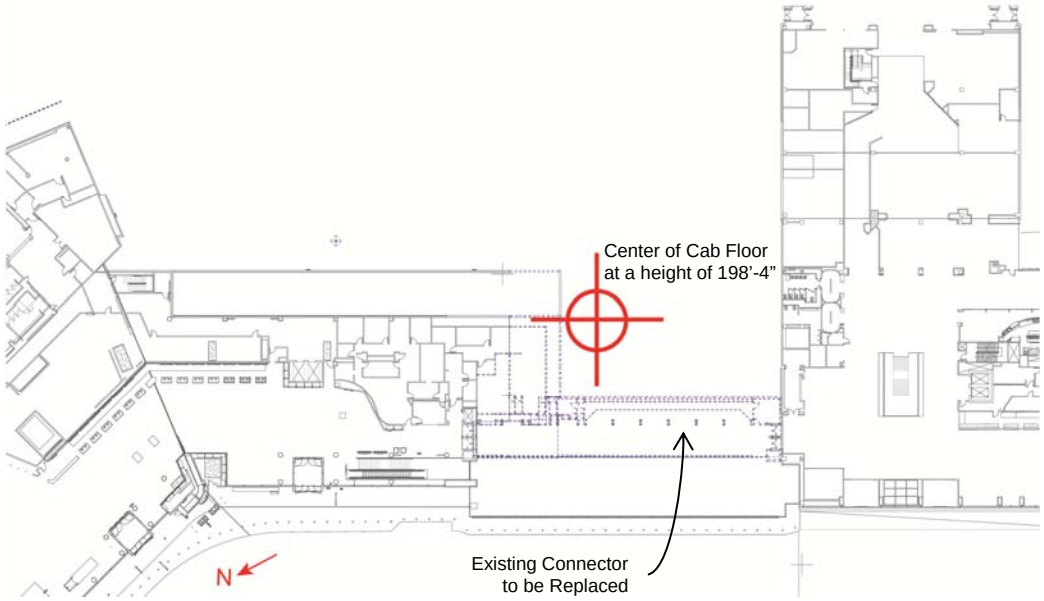
Existing Site: Aerial View

ATCT Functional and Physical Criteria

Tower Cab Design - Coordinates

The center of the tower cab floor is a fixed point in space that specifically meets FAA requirements.

- Unrestricted views of the runways and major taxiways
- Views of aircraft at all controlled gates
- Tower cab configuration



Level 2 Existing Plan

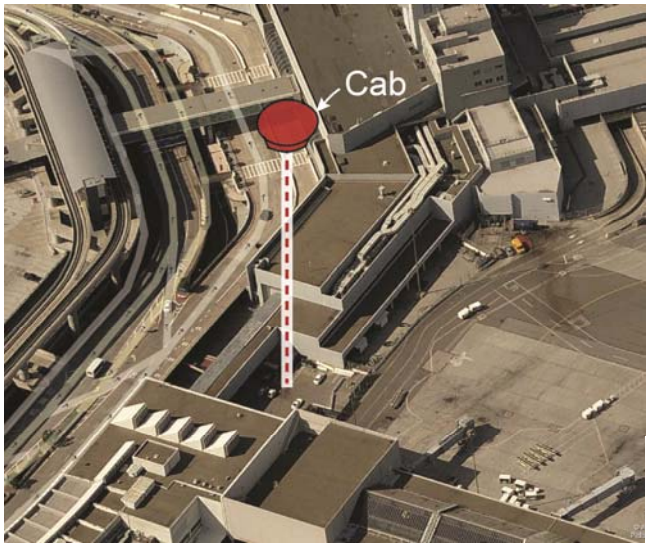
Center of Cab Floor:

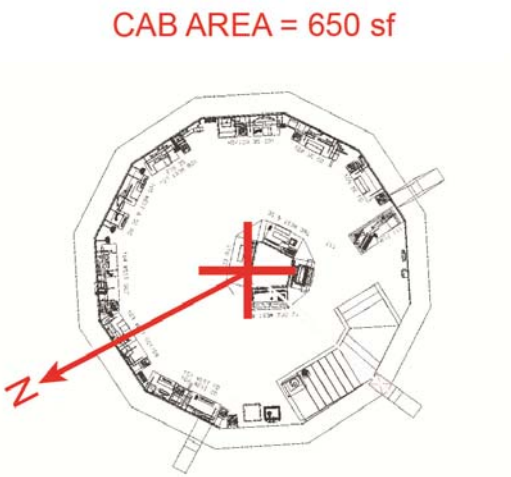
Latitude: 37° 36' 57.1656" N
Longitude: 122° 23' 01.5443" W
Height above ground: 198'-4"

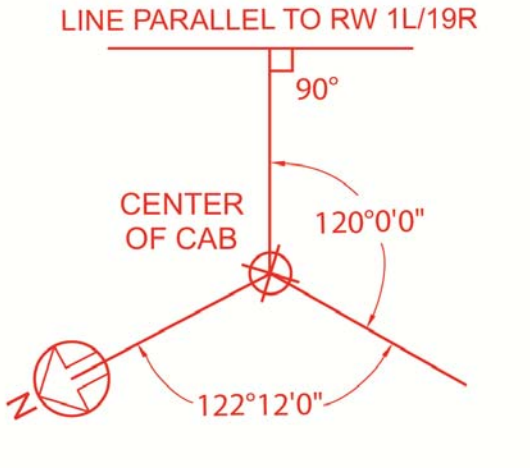
Tower Cab Design - Cab Center Point and Orientation

The cab design is prescribed by the FAA.

- 650 square foot size and geometry meeting specific FAA operational requirements



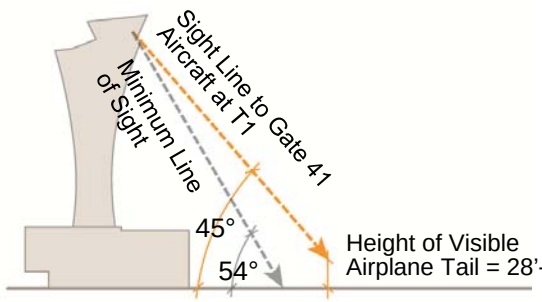


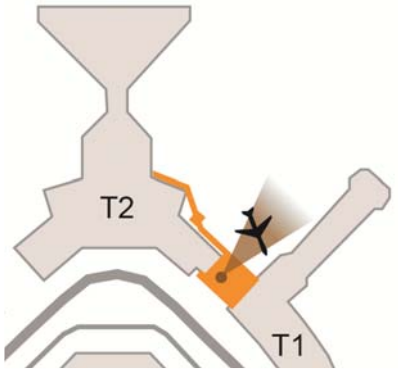


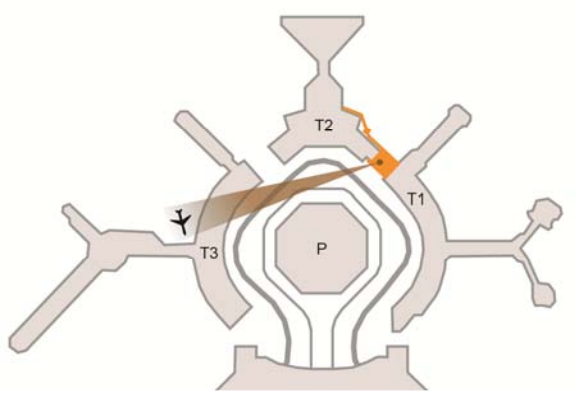
Tower Cab Design - Sightlines

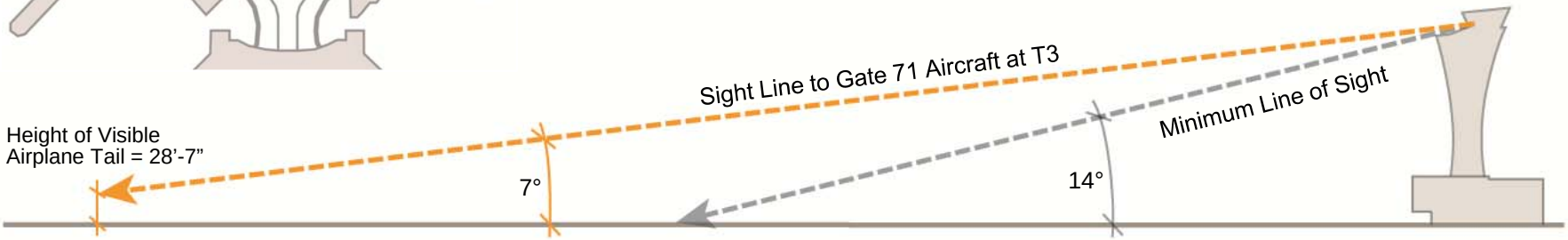
The cab design is prescribed by the FAA.

- Sloped roof on tower facilitates critical views of aircraft gates





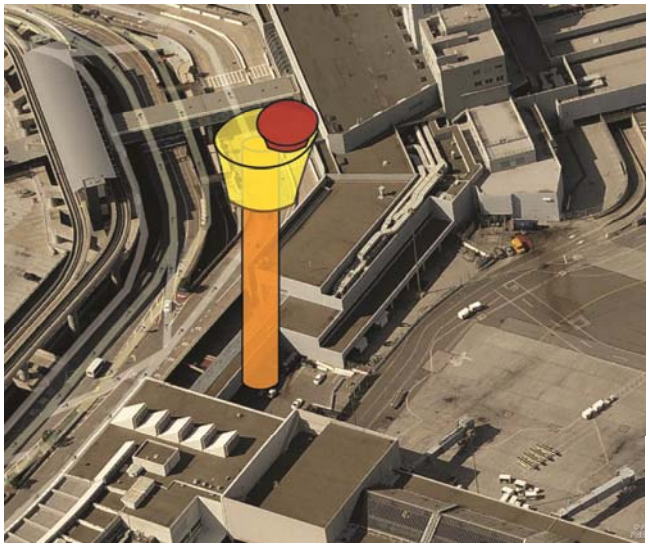


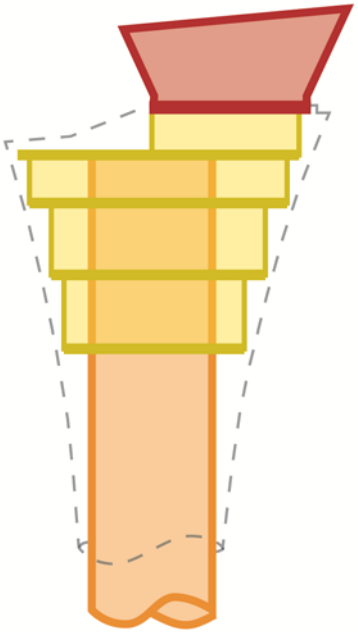


ATCT Functional and Physical Criteria

Tower Program

- Cab centered over electronic equipment space below for direct access (cab offset from tower core)
- Levels contain the minimum required program area including electrical and mechanical equipment needed for the cab and ATCT administrative spaces
- Air Traffic Administration space close to the top of the tower for emergency response and operational requirements





Cab	198’-4”	650 sf
Equipment Mezzanine	187’-10”	876 sf
Junction	177’-4”	1,778 sf
Air Traffic Support	161’-7”	1,073 sf
Lower Electrical	145’-10”	596 sf

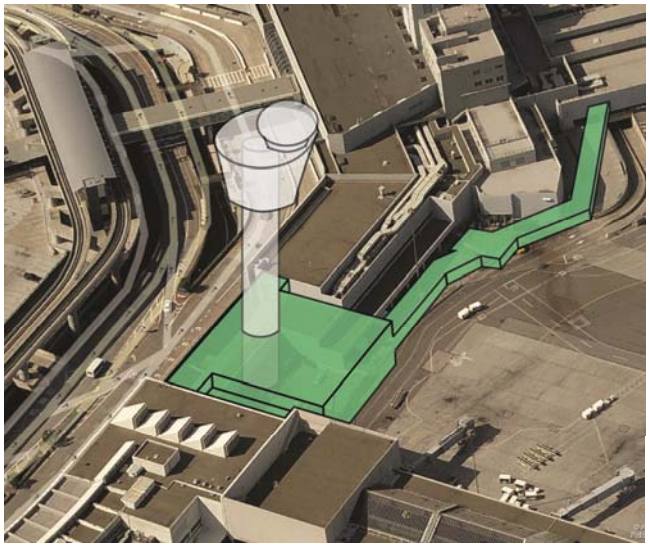
Tower Shaft

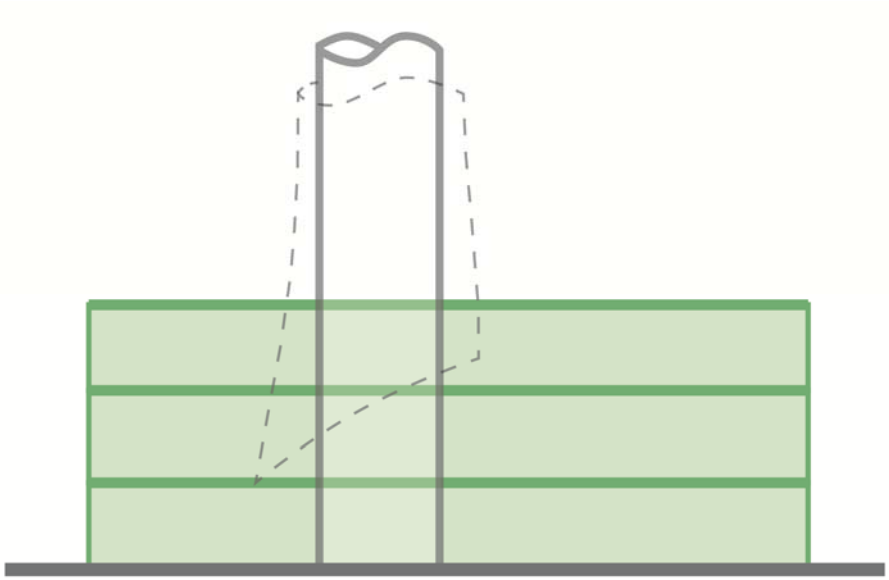
ATCT Functional and Physical Criteria

Integrated Facility Base Building

The 3-level FAA portion of the base building is designed to provide:

- Operational and support space specifically required for FAA operations
- Landside and airside access by FAA personnel
- Tower integration with FAA base building support space





Tower Shaft

Roof

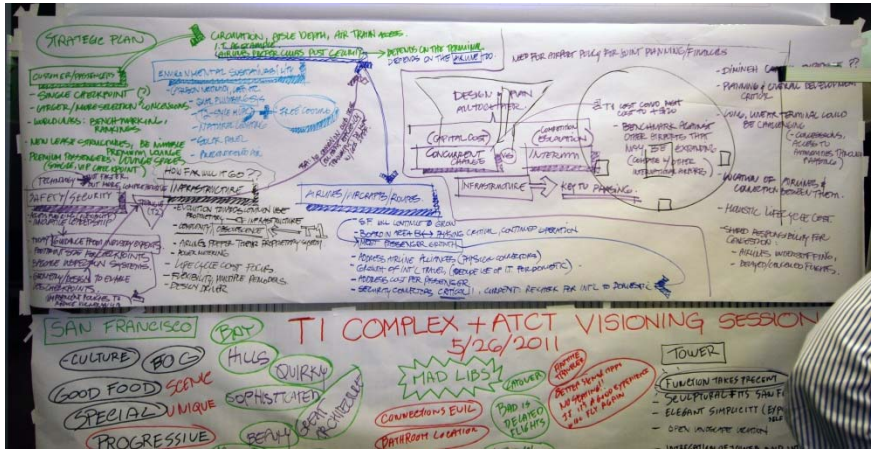
Level 3 FAA Administration

Level 2 FAA Entry and Support

Level 1 FAA MEP and Support

FAA and Airport Design Goals

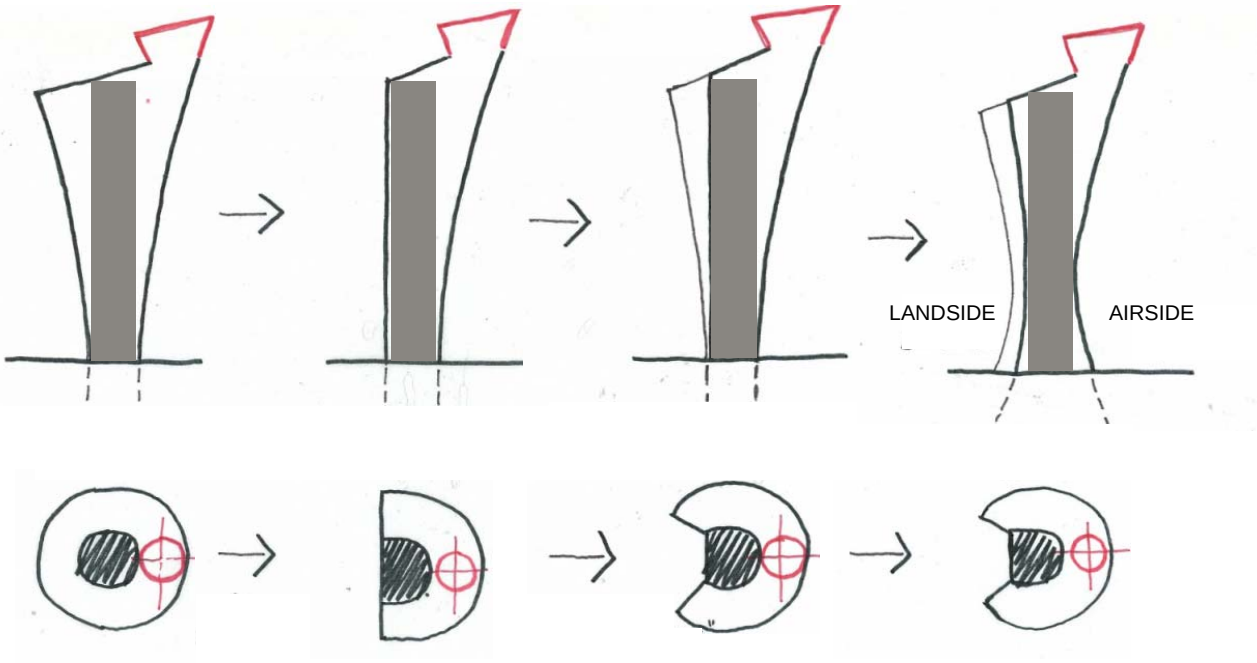
- Functional and safe control tower integrated with base building that meets all the FAA operational requirements
- Architectural design that is distinctive, while compatible in massing and expression with the existing Airport environment
- Integration of FAA and Airport functions within a single, efficient and attractive structure linking Terminal 1 with Terminal 2
- Controlled size, bulk and scale
- Sustainable, environmentally friendly facilities that achieve LEED Gold rating
- Iconic architecture that makes a unique statement and complementary to other airport buildings
- A design which engages the public from multiple points of view: seen from a distance, driving past the tower, and walking alongside its base



Images from Project Visioning Session

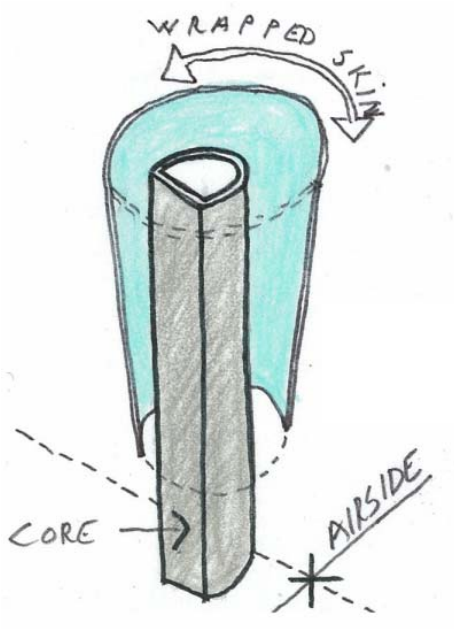
Airport Traffic Control Tower Concept

Form Development



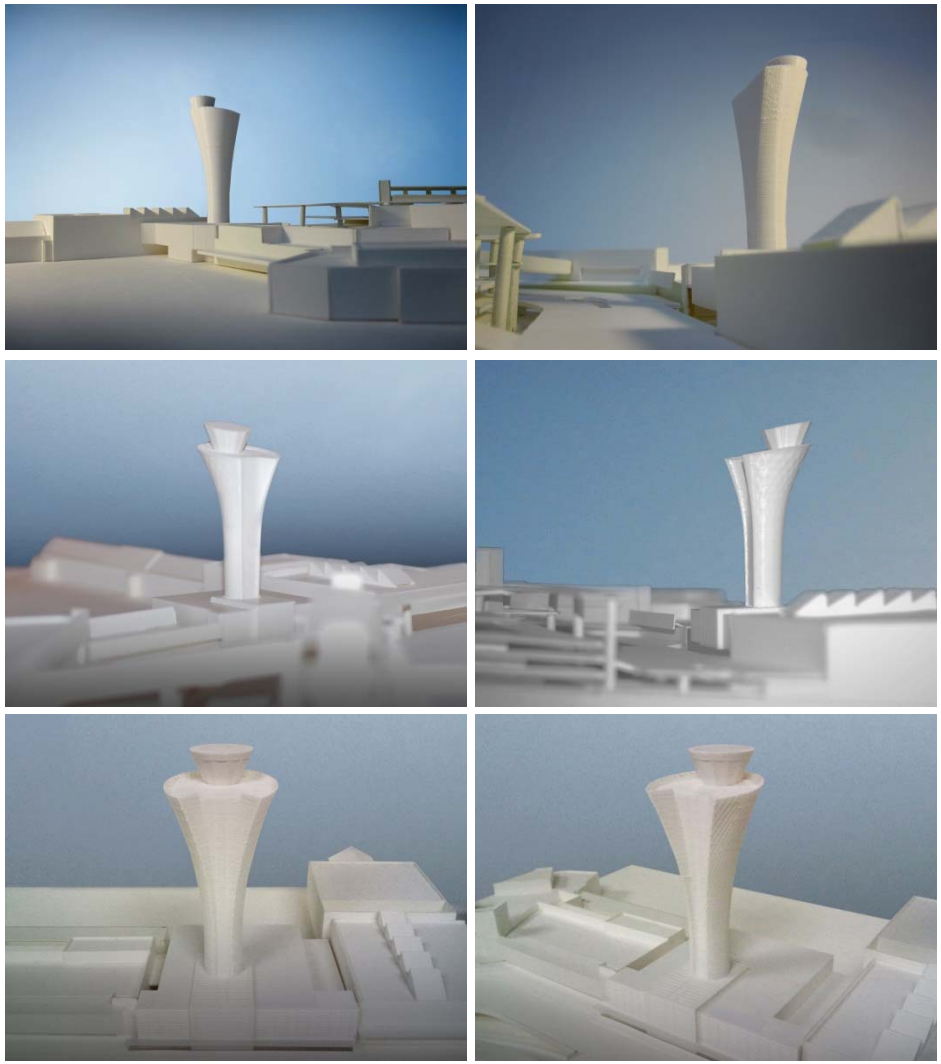
“The Slice” – The Public Gesture

Expression



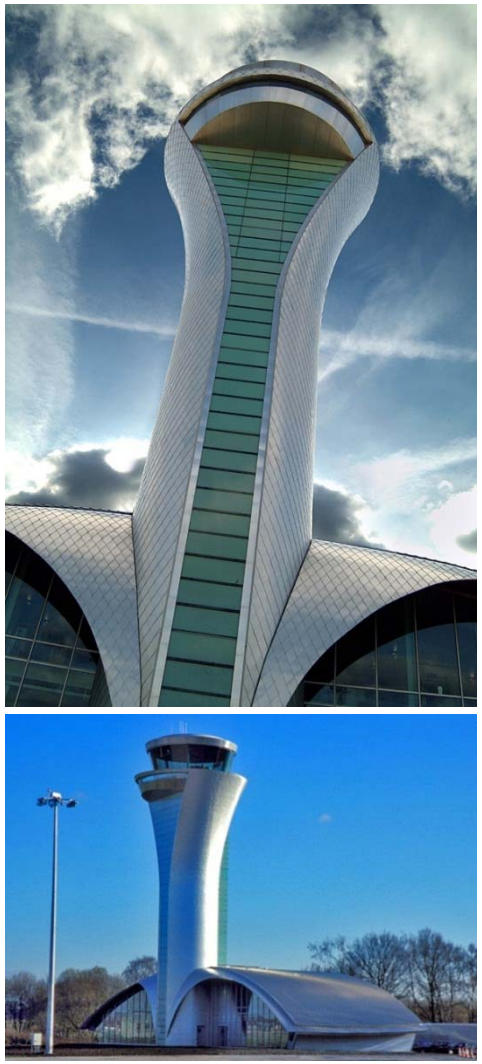
Airport Traffic Control Tower Concept

3 Dimensional Form Development



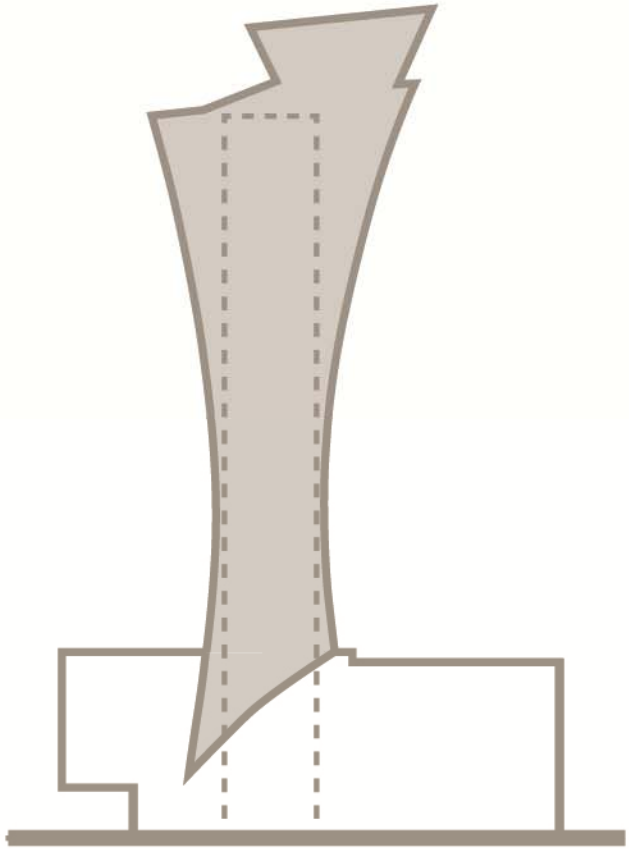
Study Model Iterations

Design Precedent

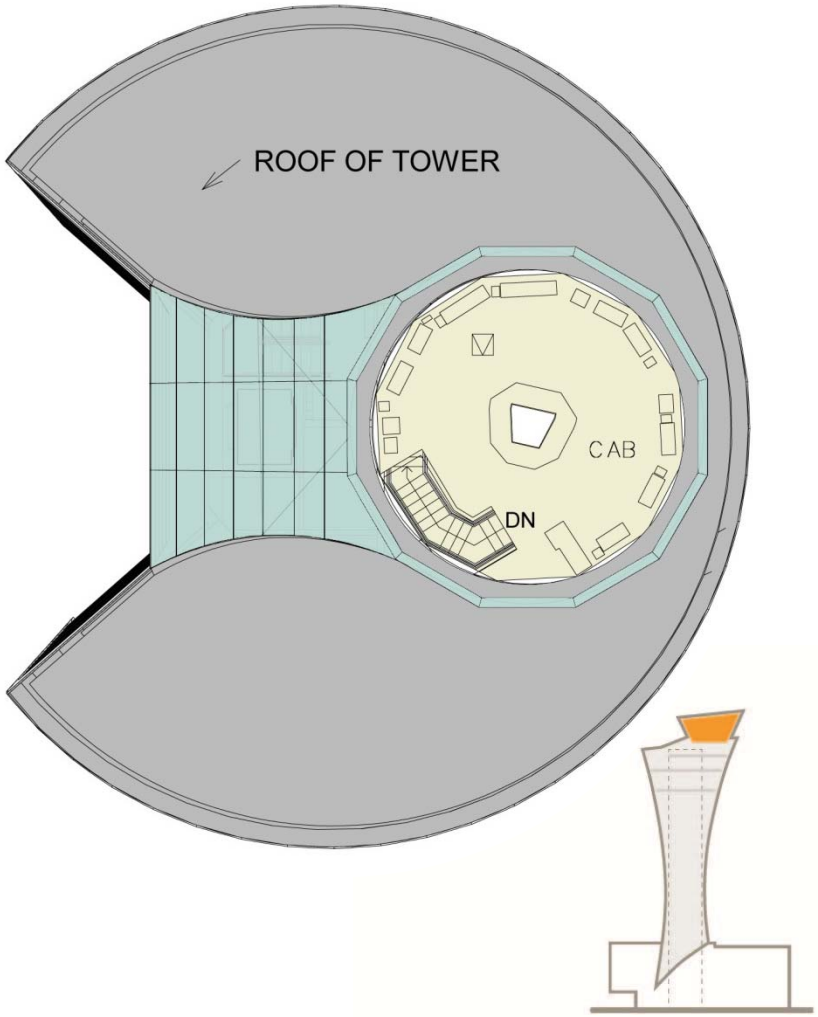


Farnborough Airport Air Traffic Control Tower, UK

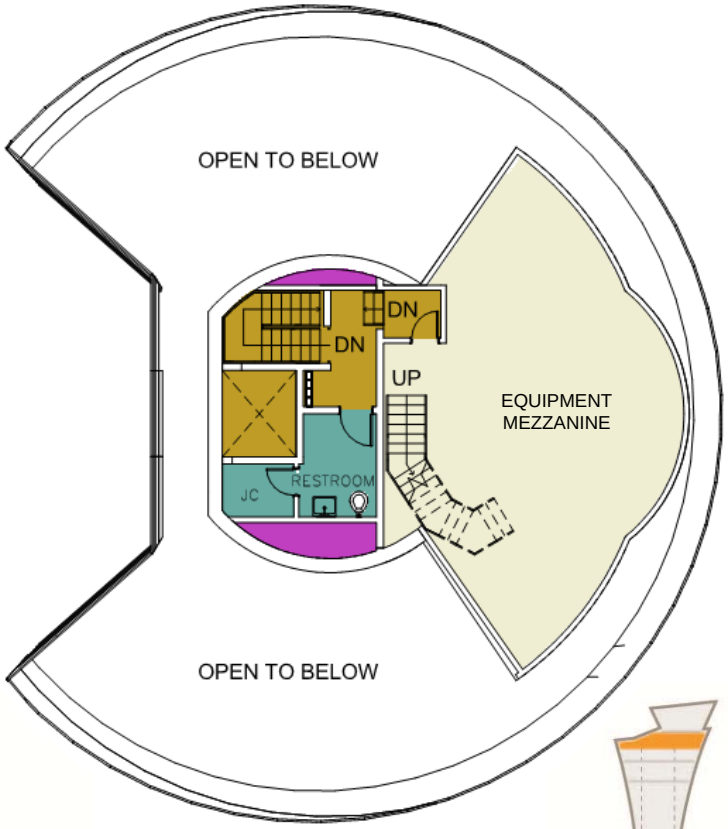
Airport Traffic Control Tower Concept



Airport Traffic Control Tower

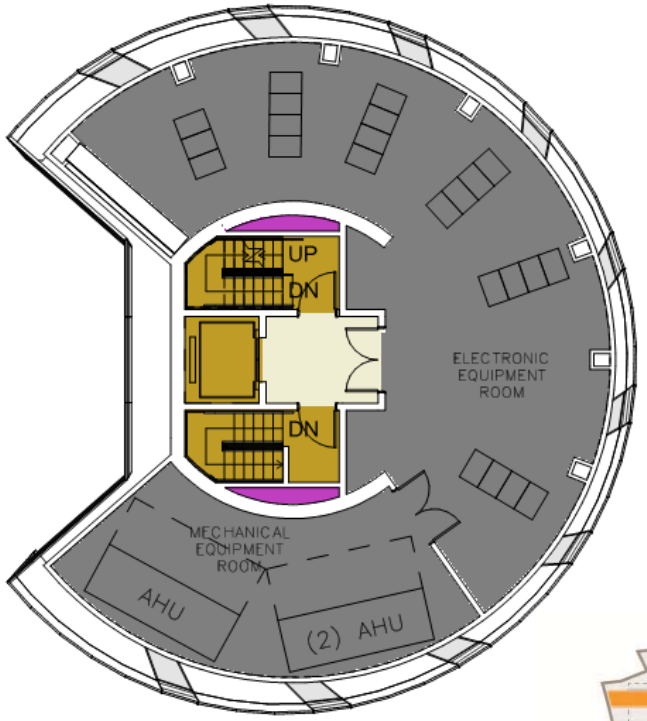


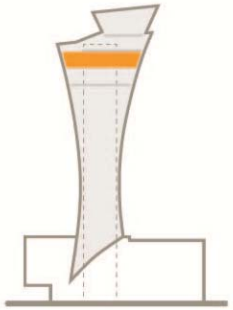
Cab Level at 198’-4”



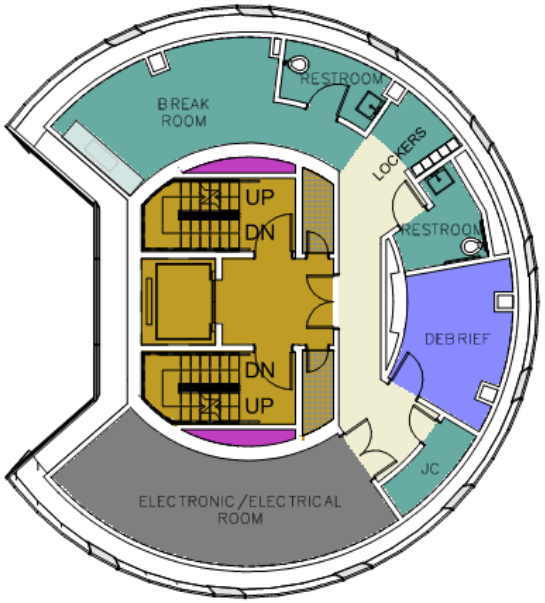
Intermediate Landing Level at 187’-10”

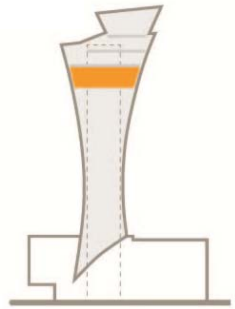
Airport Traffic Control Tower Plans





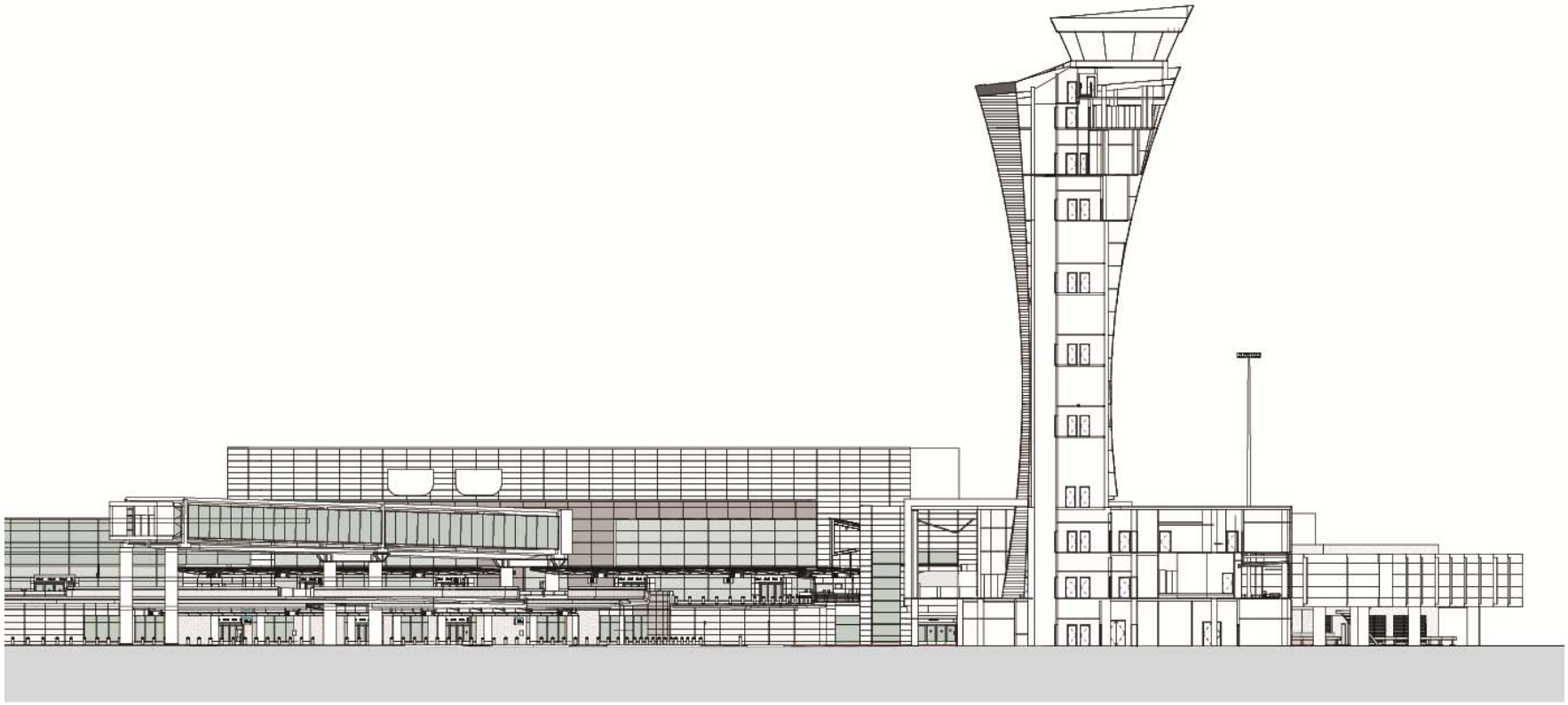
Junction Level at 177’-4”





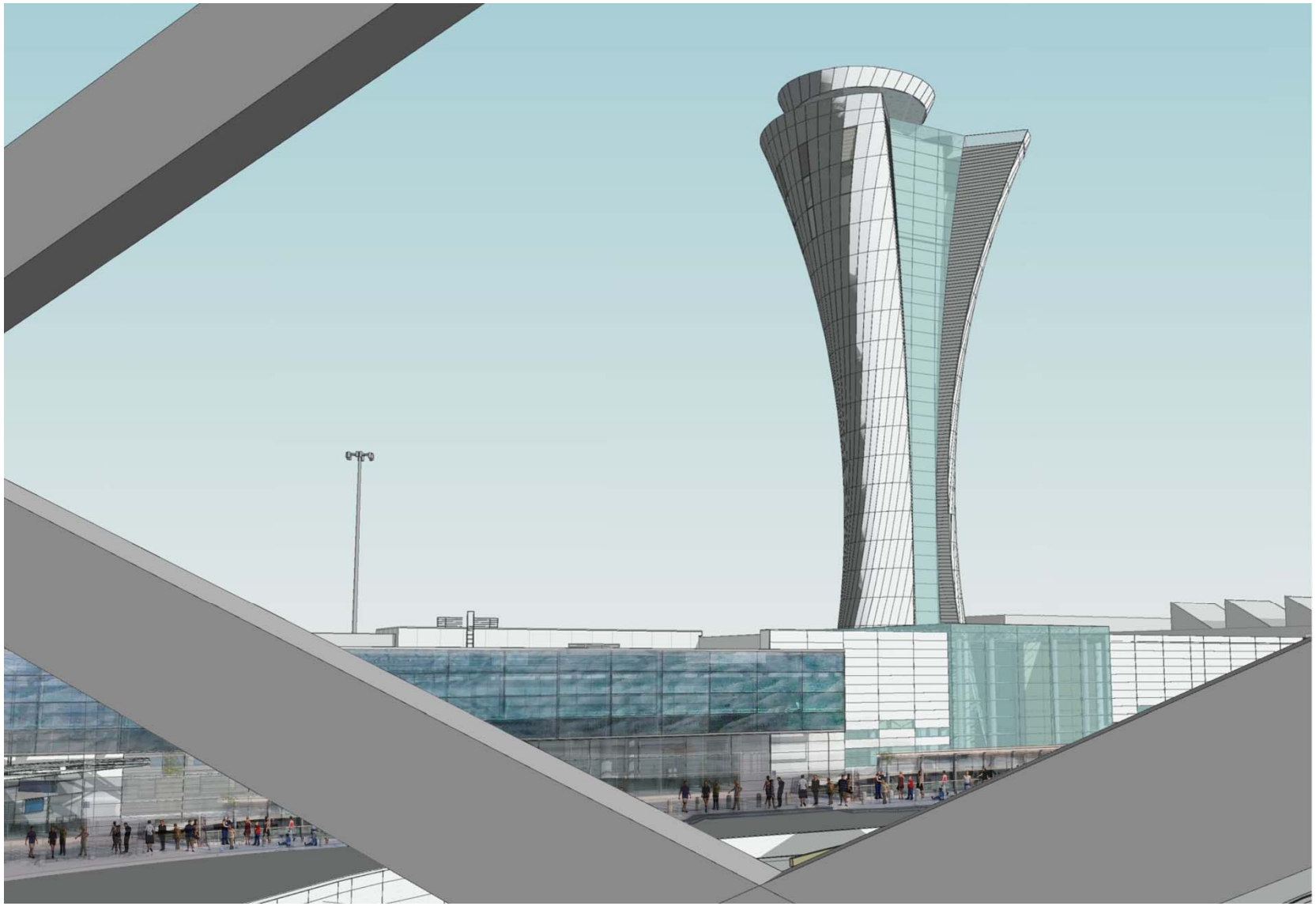
Air Traffic Support Level at 161’7”

Airport Traffic Control Tower Plans

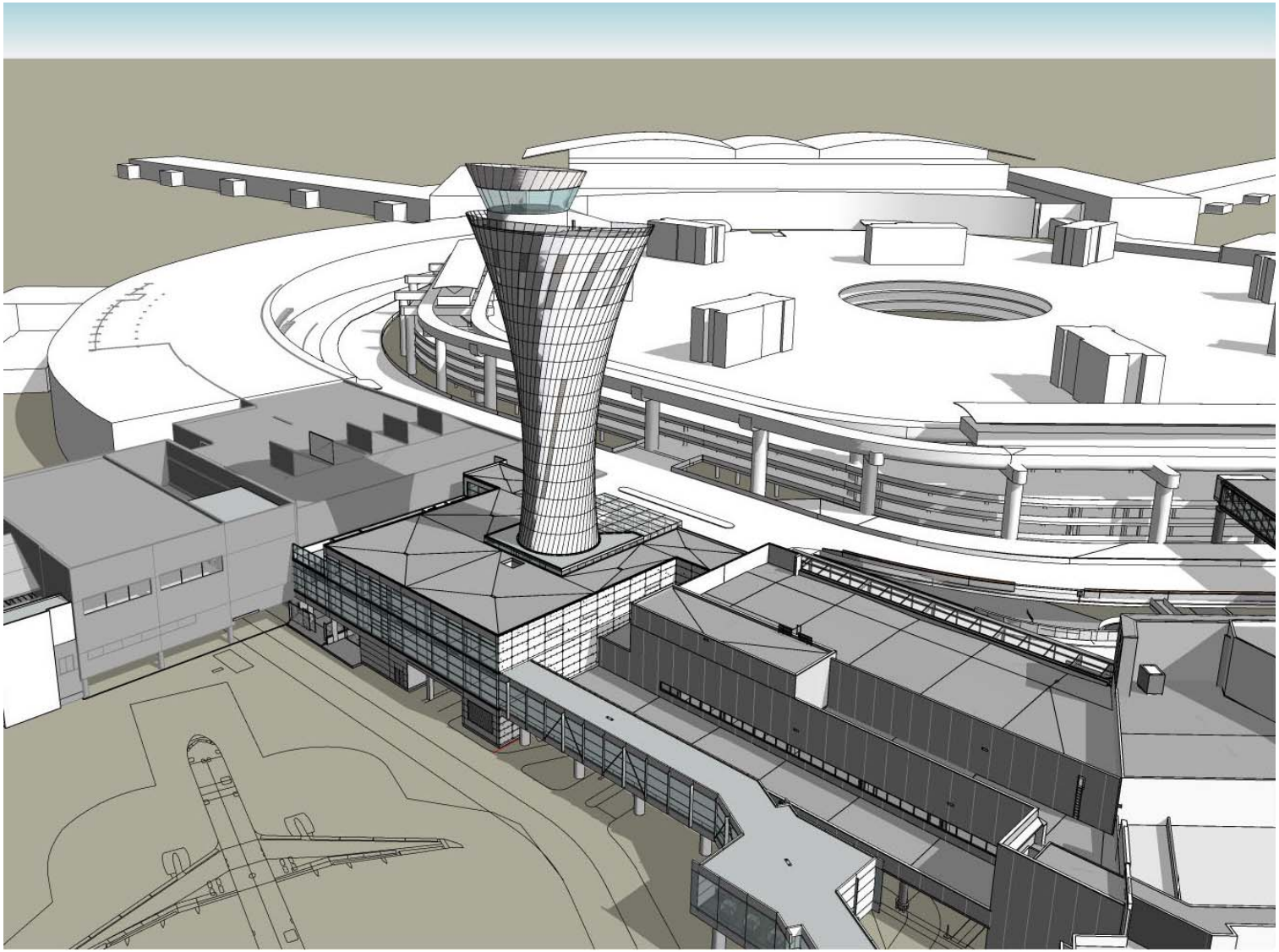


Cross Section

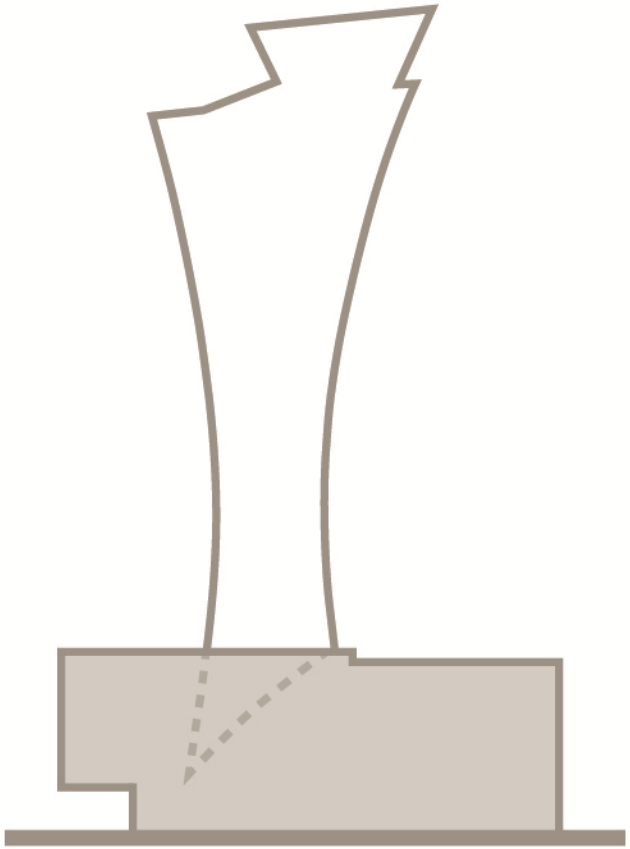
View from Terminal 2



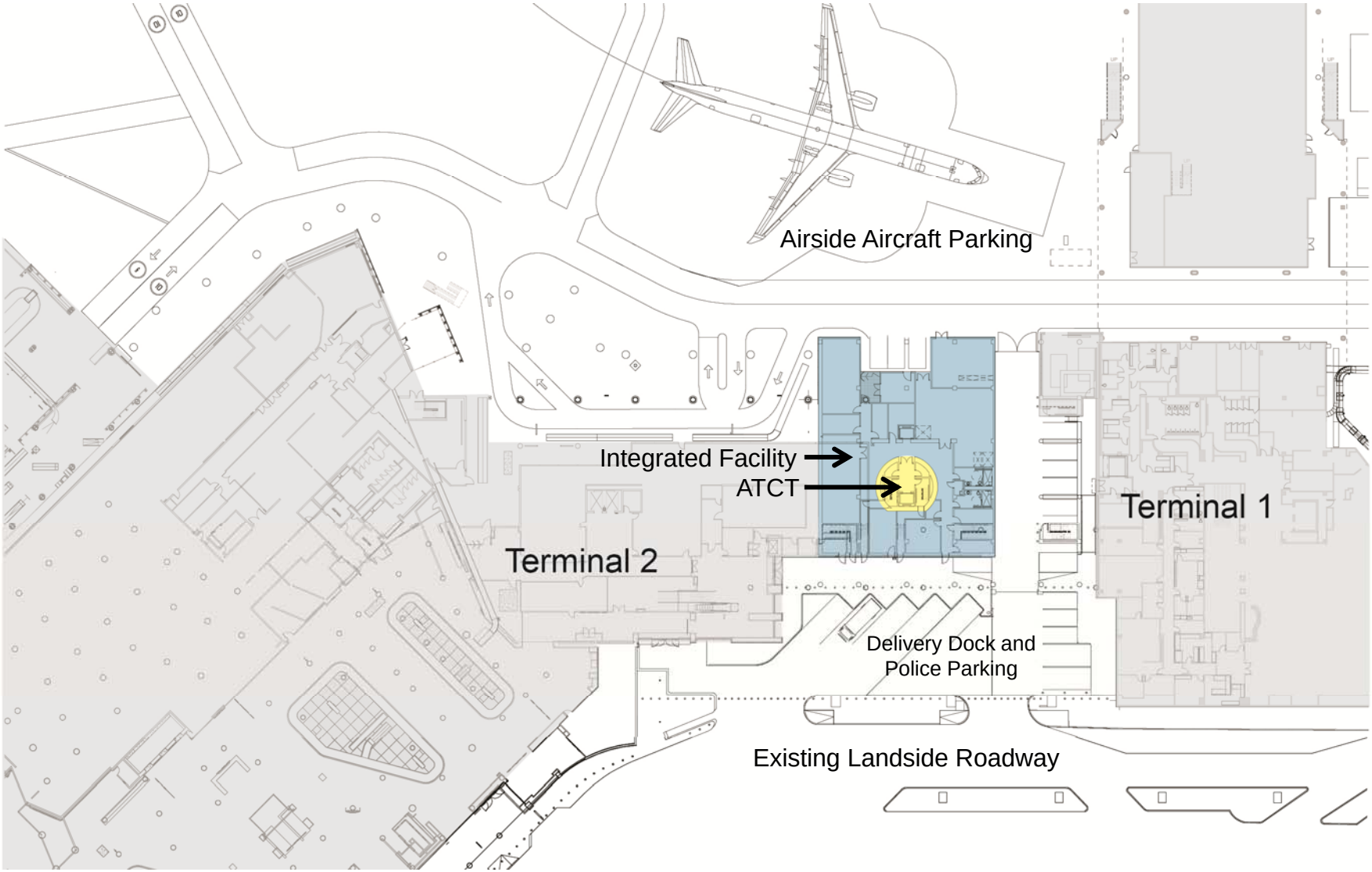
View from Terminal 2 AirTrain Bridge



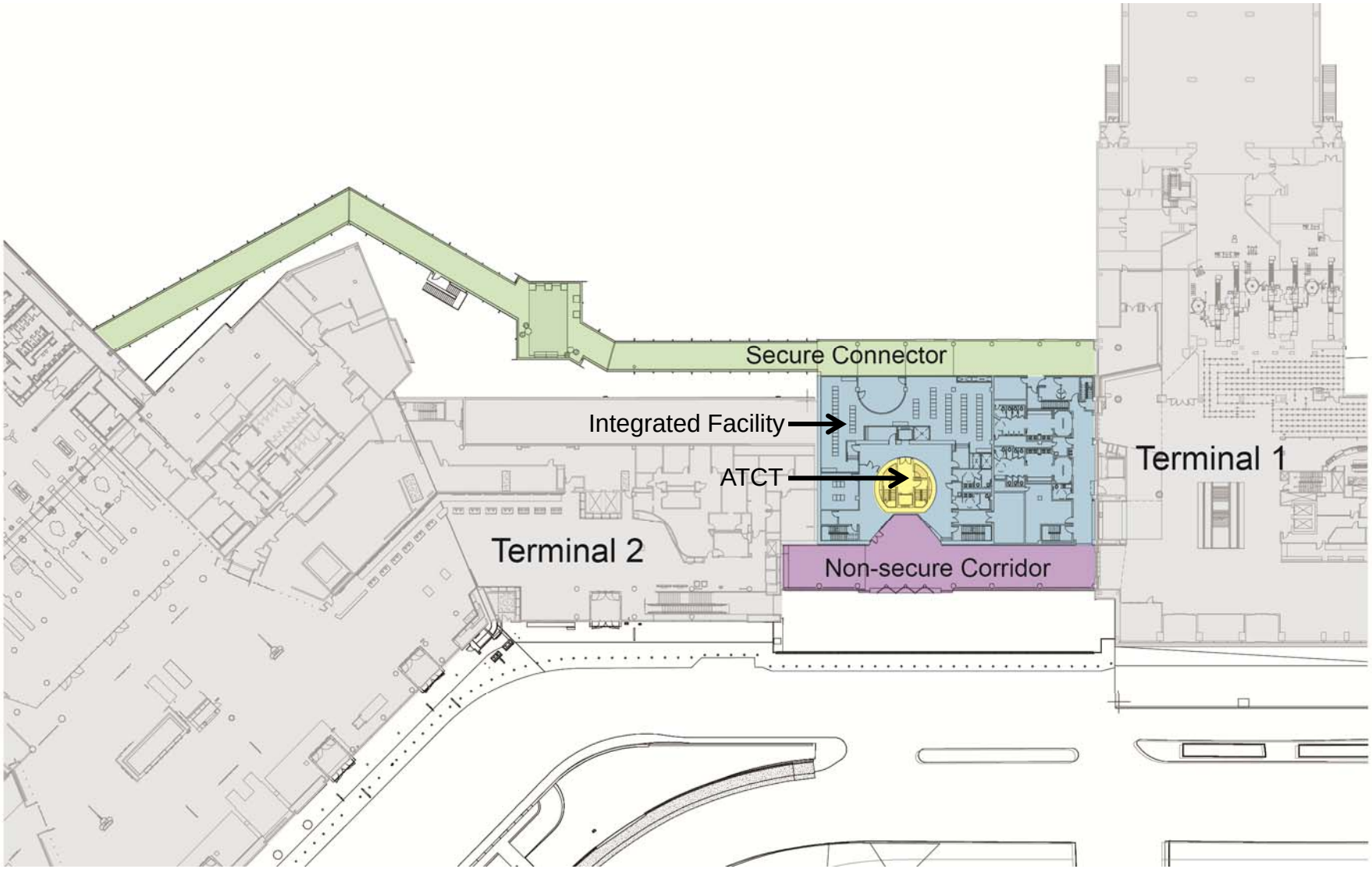
Airside Aerial View



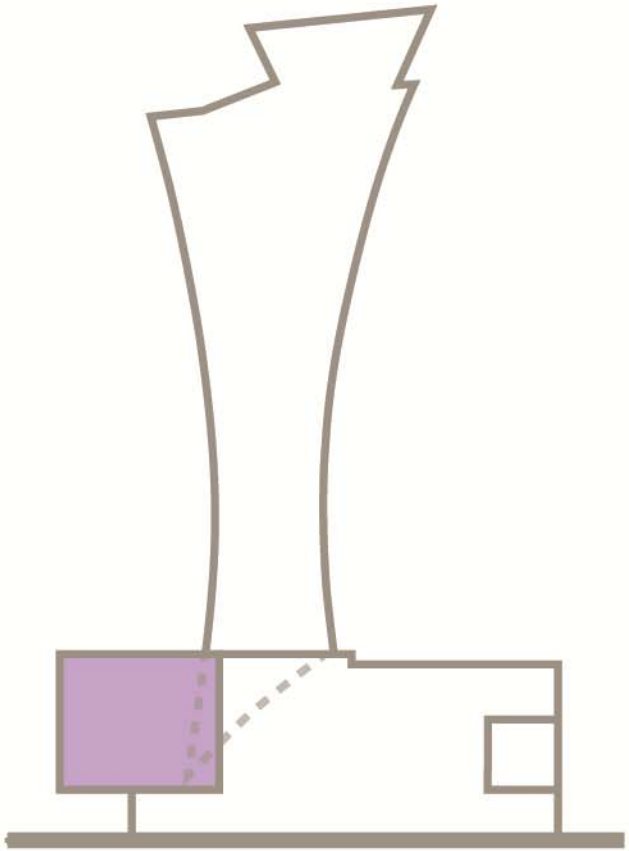
Integrated Facility, Non-secure Corridor, and Secure Connector

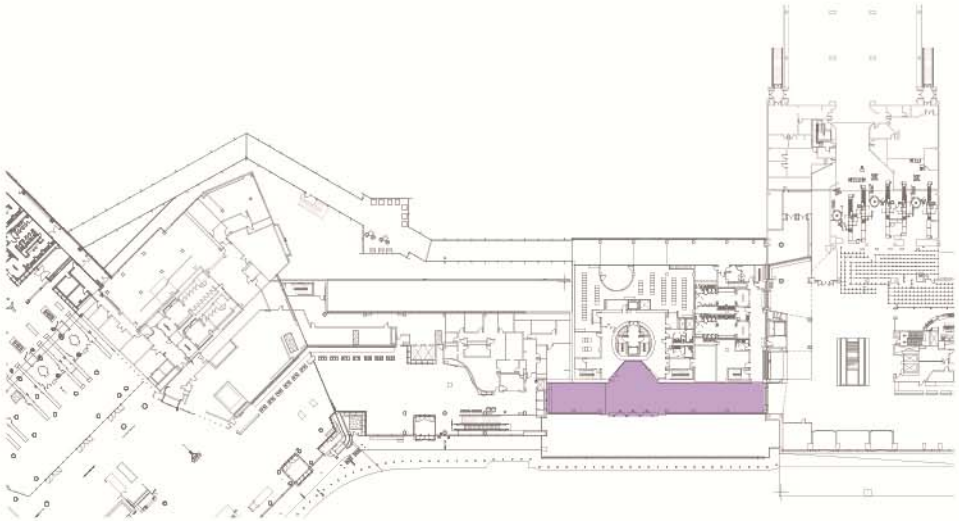


Integrated Facility, Non-secure Corridor, and Secure Connector: Level 1 Plan

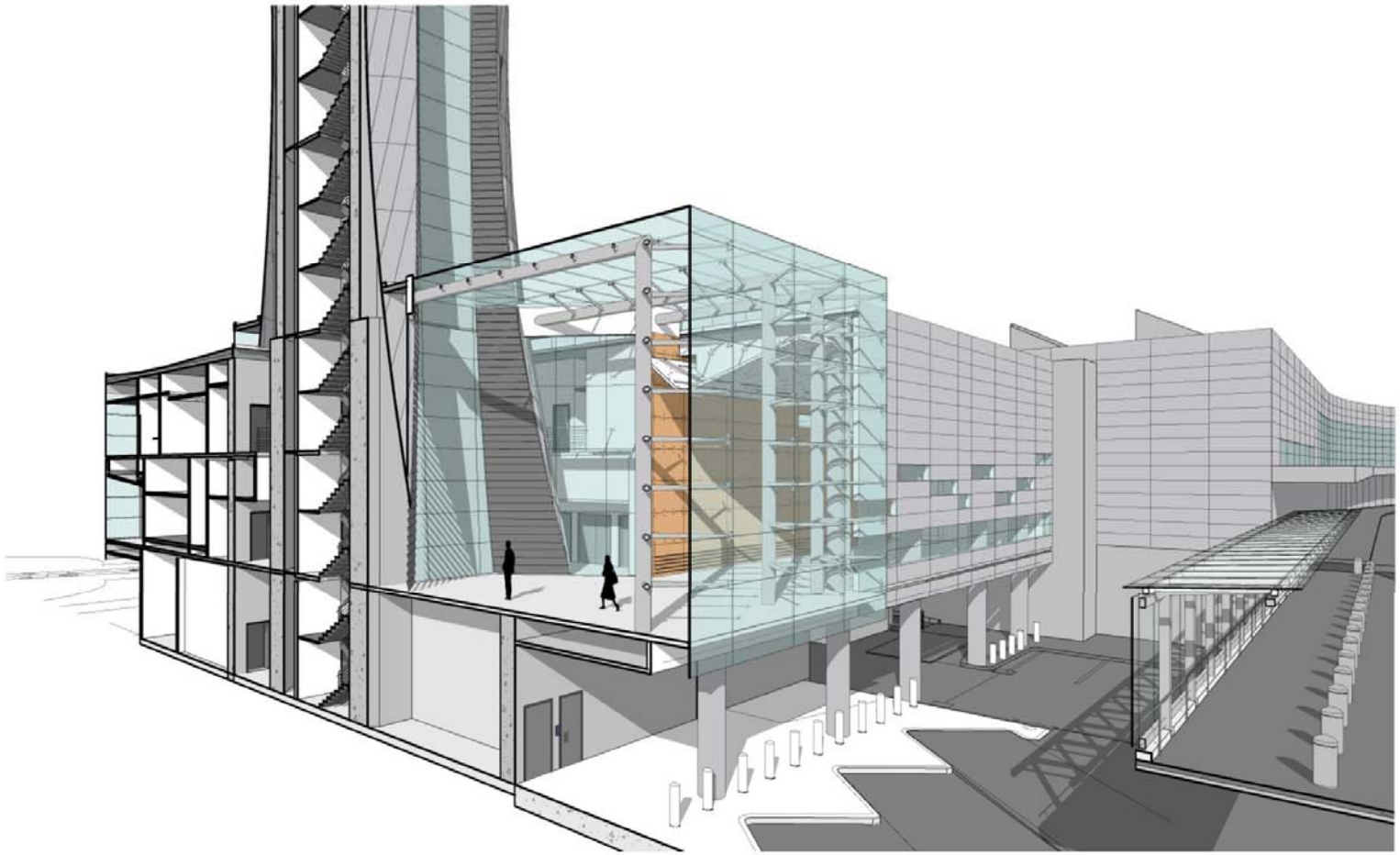


Integrated Facility, Non-secure Corridor, and Secure Connector: Level 2 Plan



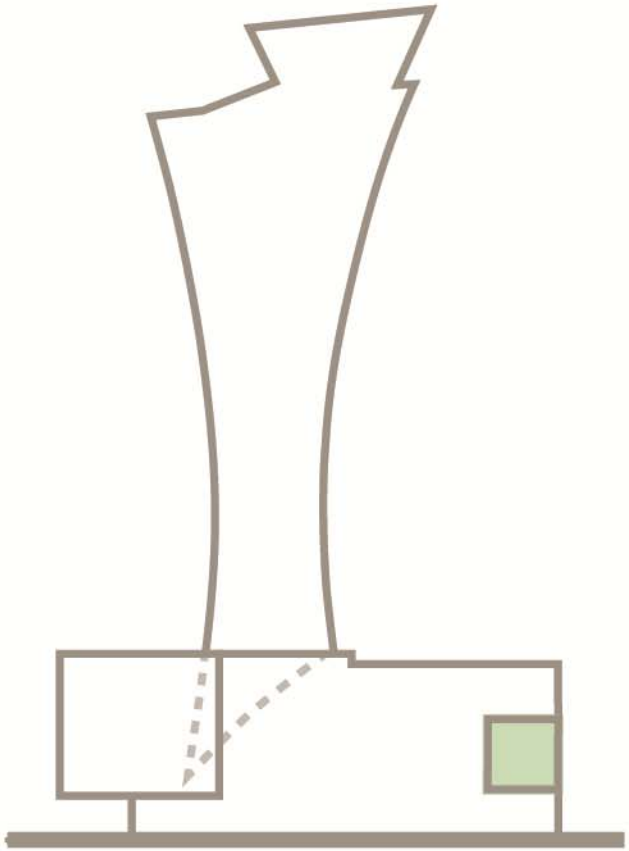


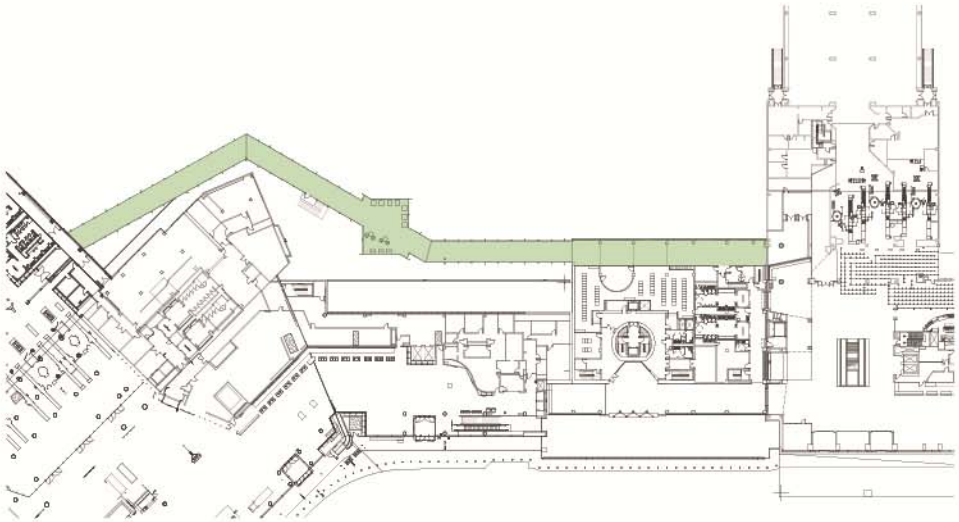
Non-secure Corridor



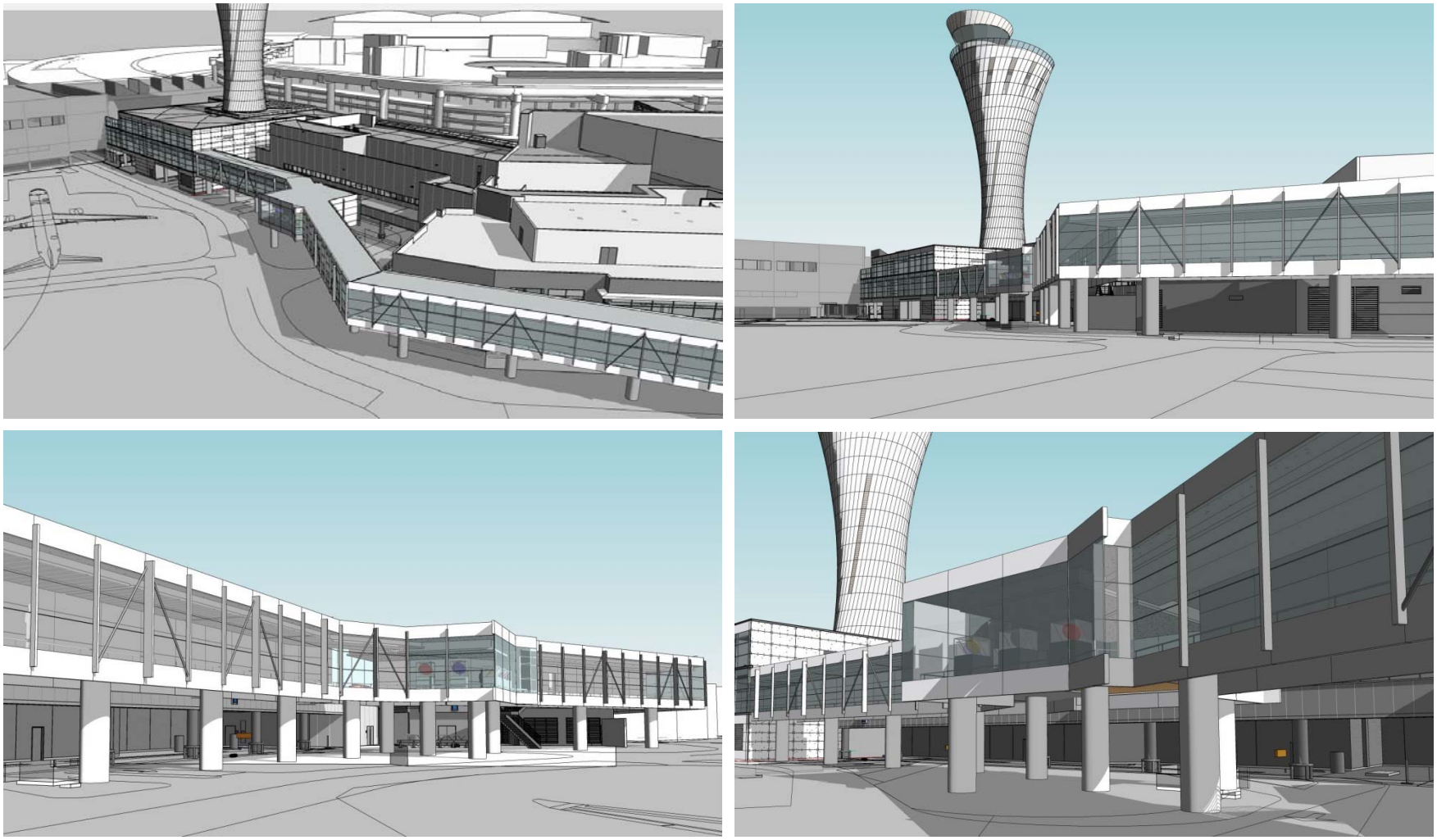
Non-secure Corridor: 3D Section

Non-secure Corridor: Interior View



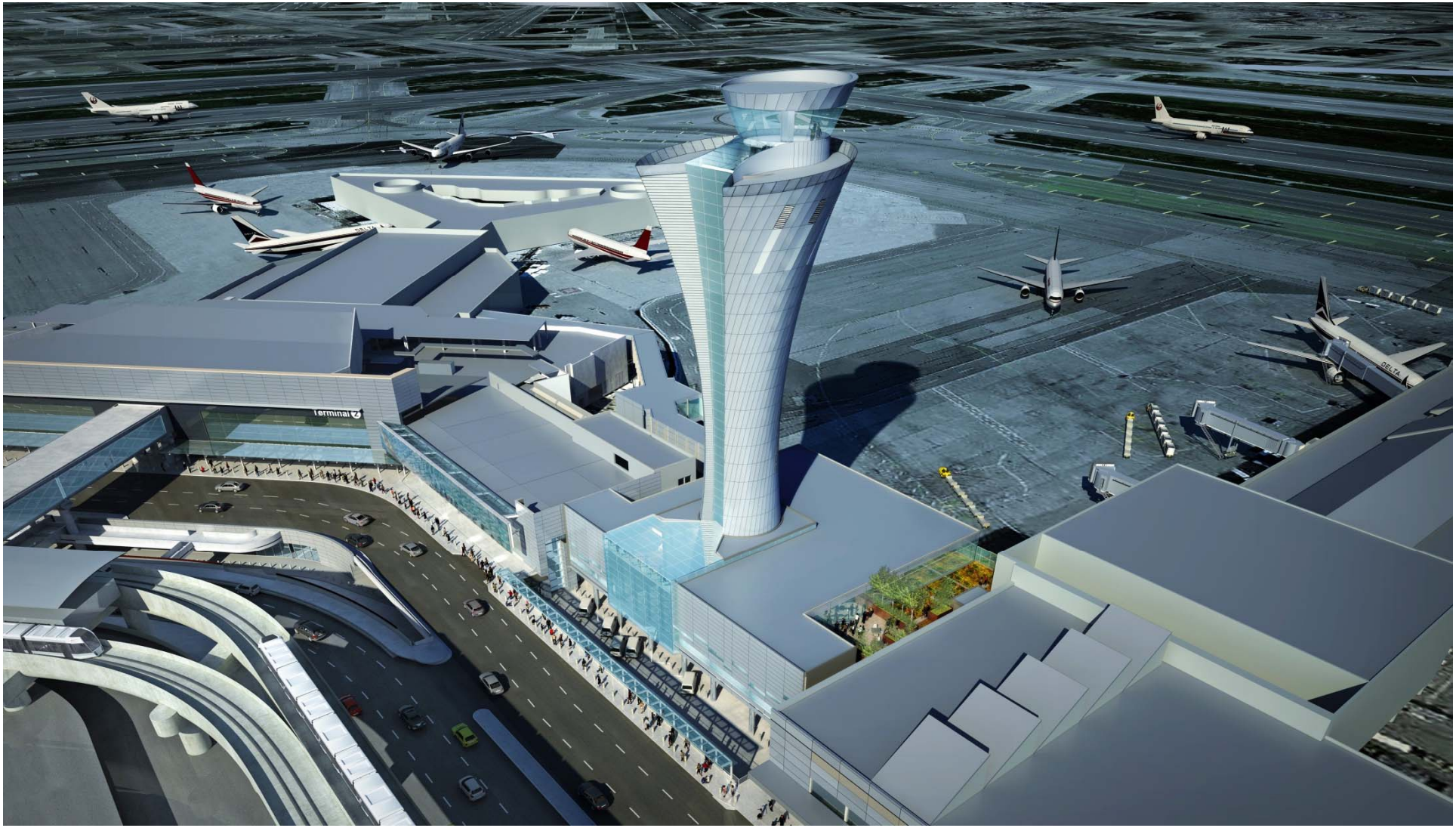


Secure Connector



Secure Connector: Exterior Views

Secure Connector: Museum Interior View



Aerial Perspective

San Francisco International Airport
Replacement Airport Traffic Control Tower and FAA / Airport Integrated Facility

HNTB

SFO San Francisco International Airport