

Addison Airport Customs and Border Protection Facility

Lessons Learned



ADDISON

Cost Overview

Project Budget



\$9,009,967.00

Final Project Cost



\$8,859,370.03

Final Project Contingency Remaining



\$150,596.97

Item Number/Description	Actual Costs
Landside Construction (JC Commercial)	
Original Contract Amount	\$6,223,949.00
Change Order No. 1	\$22,260.16
Change Order No. 2	\$141,881.10
Change Order No. 3	\$17,257.41
Change Order No. 4 (Final Reconciliation Change Order)	\$222,681.13
Final Landside Construction Totals	\$6,628,028.80
Airside Construction (Fluor Heavy Civil)	
Original Contract Amount	\$1,769,850.00
Value Engineering	(\$116,517.76)
Unused Contingency (3.5%)	(\$62,392.42)
Final Airside Construction Totals	\$1,590,939.82
Project Administration Contracts	
Landside CM (Garver)	\$98,573.00
Airside CM (Garver)	\$107,875.00
Construction Testing (Fugro)	\$45,419.50
Furniture, Fixtures & Equipment (bkm)	\$156,158.03
CBP IT and Security Allowance	\$190,975.88
User Fee Payment Kiosk (LiveWire Kiosk, Inc.)	\$26,400.00
Monument Sign (Kuster Signs)	\$15,000.00
Final Project Administration Totals	\$640,401.41
Final Project Totals (Landside, Airside, Administration)	\$8,859,370.03
Project Contingency Remaining	\$150,596.97
PROJECT BUDGET	\$9,009,967.00

Schedule Overview

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MAY 2015

Addison Airport receives a letter from CBP the current facility does not meet current standards and a new compliant facility is needed for CBP to remain at Addison.

OCT 2016

Council directed staff to procure cost estimates for development alternatives at three sites on the airport for a standalone CBP facility

FEB 2017

Council approves a contract with Page to conduct a site analysis and provide cost estimates

JUL 2017

Council approves recommendation for the midfield site and addition of airport administration offices as a combined facility

OCT 2018

Construction documents are completed

JAN 2019

Opened bids on the facility and all bids were over budget and rejected

Schedule Overview

MAY 2019

Project was rebid with the Town selecting JC Commercial for the contract

SEP 2019

Groundbreaking for the Facility

NOV 2020

Airside Apron started construction

APR 2021

Airside Apron and the 2nd Floor Town of Addison space was substantially completed

DEC 2021

CBP began operation out of their new space on the 1st Floor

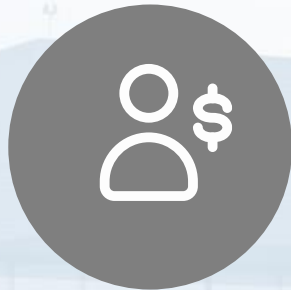
APR 2022

Construction Contract was closed out

Lessons Learned Overview



**Inaccurate Cost
Estimating**



**Separate Work
Packages Created
Contract Document
Conflicts**



**Clash Detection
Needed**



**Technology
outpacing
the project**



Cost estimates during design were underestimated and required a rebid to offset a design that did not meet budget.

- 1** A specialized cost estimating firm was included during design to assist with design decisions to meet the programmed budget.
- 2** After the first round of bidding, the lowest bid was \$1 Million higher than the estimate. Contractors informed the Town the estimates were too low based on the current design.
- 3** Airside apron pavement was removed and procured separately to obtain federal funding.
- 4** Facility was rebid with the ability for contractors to provide value engineering options to meet the project budget.
- 5** Contract was awarded with several value engineering alternatives that later caused quality and installation issues during construction.

Lessons Learned: Cost Estimating

6 For future facility projects, it is recommended to review the use of Construction Manager at Risk (CMAR). This allows the Owner and Architect to work directly with the contractor during design to better estimate materials and construction methods. CMAR is allowed by Texas Government Code 2269, Subchapter F.



7 CMAR is a two-step process that starts with contractor qualification and references within a RFQ phase. Preconstruction services pricing and construction scheduling are evaluated in the second step, known as the RFP phase. This process is typically completed before the start of the preliminary design phase.

8 The contractor is required to obtain 3 bids for major work packages to establish a guaranteed maximum price (GMP). The contractor will establish the GMP based on the 95% construction documents.

9 CMAR is not allowed for airside site improvements that receive federal funding. New aprons and taxiways follow the standard design-bid-build (DBB) procurement.

10 CMAR is not allowed for roadways if it is independent of a facility.

Lessons Learned: Separate Work Packages



Procuring specialized work in separate packages saved cost by eliminating general conditions but increased the risk of contract document errors that created specification conflicts

- 1 Demolition of the existing hangars and asphalt pavement allowed the construction of the new building to begin immediately without delay due to site conditions.
- 2 Specialized demolition contractors were able to provide a significantly lower price due to items of work focusing solely on demolition and not final improvements.
- 3 The contract specifications for the new building site work were not updated when the demolition package was procured separately. The demolition contractor removed more site material than anticipated and the new building site work earthwork quantities were based on the existing site before demolition.
- 4 An additional site survey should have been completed upon completion of the demolition work to update the new building site work quantities.
- 5 Project cost impact of \$118,523.60 based on change order pricing during construction



Lessons Learned: Clash Detection



Clash Detection Analysis was not performed during design and created installation issues during construction.

1

Clash detection requires detailed Building Information Modeling (BIM) that was estimated to be \$42,000 in the original design fee. This scope item was removed during fee negotiations due to the high design cost.

2

Clash detection in buildings helps reduce potential conflicts between HVAC, electrical, and structural fitment issues during construction.

3

Issues that arise during construction are typically assessed a higher price due to material availability, custom fabrication, and project scheduling.

4

This project contained several issues related to structural members conflicting with room layouts, mechanical systems conflicting with wall heights within CBP space, and electrical outlets removed after the elimination of a major circuit.

5

Project cost impact of \$135,740.81 during construction due to conflicts. Project could have saved over \$93,000 in construction if clash detection was performed.



Lessons Learned: Technology



Technology items were bid early in the project and became outdated and unauthorized by the time installation occurred.

- 1** Town of Addison furniture required the installation of additional power sources due to an increase in power required by the custom designed furniture.
- 2** CBP access control and security cameras became outdated less than 6 months into the project. Also, CBP updates their authorized manufacturer lists every 6 months.
- 3** All Owner furnished related to electronics or finishout need to provide clear expectations to the contractor on installation requirements and provide an allowance to account for changes in market conditions. Technology is evolving rapidly, and the contract needs to allow the project to stay up-to-date.
- 4** Project cost impact from change order pricing was \$111,065.53



Questions / Discussion

The logo for Addison, featuring the word "ADDISON" in a bold, blue, sans-serif font centered within a white circle. This circle is set against a blue background that is part of a larger graphic design on the right side of the slide, which includes diagonal white lines separating blue and dark grey areas.

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