

ASCE Conference Lessons Learned

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A STAR ALLIANCE MEMBER 

UNITED 

Topics

- Lessons Learned
 - Geotechnical
 - Structural and Electrical
 - Partnerships in Construction
 - Contracts
 - Incentives
 - Retrofits, Refurbs, and Adjacencies
 - Life's Lessons

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Geotechnical

- \$35M new 95,000 SF widebody hangar capable of 787 and 777 maintenance
- Due diligence
 - Conduct extensive soil borings
 - Then conduct some more
 - Suitable backfill
 - Water Table Fluctuation
 - Tidal
 - 24 x 7 dewatering
 - Pumps, filters, disposal
 - Soil bearing capacity
 - Sheet piles vs. sloping
 - Additional explosion proof sump pumps in pits
- Cargo Warehouse Settlement
 - Floor slab replacement
 - 200 helical piles
 - Operational Impacts



Structural and Electrical Lessons Learned

- Ground up 85,000 New Structure at EWR
 - Fiber optic duct bank discovered during foundation excavation
 - Design based upon existing condition information
 - Relocation not an option
 - Foundation modification required to work around duct bank
 - Initial building design encroached upon Airtrain right-of-way
 - Design based upon asbuilts and existing condition information
 - Building structure required modification to clear right-of-way
 - Verification of existing conditions and asbuilts can save rework down the road
 - Not always possible so anticipate unforeseens and carry contingency where verification is not possible or feasible
- Prebundled cable assemblies used on initial phase of project to reduce installation costs and schedule
 - Combined unshielded control and line voltage wiring in bundle
 - Required significant rework due to cross-talk

Partnering makes or breaks projects and schedules

- EWR Checkpoint Consolidation
 - Outstanding partnership between UA, PANYNJ and TSA
 - Availability at all hours
 - Flexibility during phasing while always maintaining security & safety
- Existing facility retrofits and egress
 - Repurpose – reassess early to maintain schedule
 - Avoid lost time by verifying code interpretation assumptions



Contracts and Procurement

- Contract and subcontract terms out of sync spell performance and schedule trouble
 - Payment terms matter and need to be aligned for all parties
 - Unforeseen exposure can sink the ship
 - Fixed fee subcontract subcontracted with T&M agreement
 - Not impossible but must be very closely managed
- Procure early and often
 - Importance of being proactive about purchasing/sourcing everything needed for the project no matter how small it is
 - Once caught up in the day-to-day of managing the project it is not hard to forget some items that now become critical path for schedule when they did not need to be

Incentives

- National retail fueling tank field replacements
 - \$75M program at 100+ stations
 - Retail customer habits
 - Less than six weeks to permanent change
 - Challenges making schedule
 - BLDs unsuccessful
 - Needed to understand what drives the individuals, companies and providers that make up your project team
 - Small specialty shops
 - Limited reserves
 - Pipeline was the answer
 - Future work guarantee
 - Negotiated unit cost structure

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The Challenge of Retrofits, Refurbs and Adjacencies

- Sleep Rooms are important
 - Geotech is only part of the equation
 - Existing infrastructure issues – above and below
 - Build it once
- Reuse of existing equipment – do you really want to do that?
 - Balancing budget and reliability
 - Pay me now or pay me later
 - Clean slate building extension
 - BHS enhancements and modifications

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General Construction Lessons Learned

- Never underestimate the amount of time it will take a client to make finish decisions
- You are not going to like this – 360 Review
 - What was ok before – not so much now
 - Walk with your customer – early and often
- Internal partnerships are as important as external ones – maybe more important

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Life Lessons

- Spoorisms 1 – 3
 - We are people first
 - The auditors are coming
 - Don't work during your time off unless you don't work during your time on
- EZPass and the slowpoke
 - That might be ...
- You get what you pay for
 - Unless

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