Introduction & Overview

- Airport work is often complicated, high stress and risky. Hence, airport asset owners have come to expect a high level of service when it comes to managing their assets.
- Airport Projects are often characterised by working within designated boundaries, dealing with short operational windows, managing security risks and requiring an extremely high quality finished product.
- The relationship between asset owner, contractor and sub contractor is vital to managing the associated risks and opportunities and is vital to delivering a successful outcome for all.
- This case study will explore Boral’s experiences in re-sheeting runway 16R/34L at Sydney Airports – Australia’s busiest airport.

Contents

1. Sydney Airport Overview
2. Managing Risk & Reward
3. Pre-Construction Planning
4. Construction ‘Smarts’
5. Lean Contracting
6. People
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Sydney Airport Facts & Figures

- Sydney airport has 3 runways:
  - Main North/South (16R/34L)
  - East/West &
  - Third runway.
- Runway 16R/34L is 3,962m long and only 1 of 4 commercial runways capable of landing a space shuttle.
- By the time the paving shift is underway there will be more than 50 aircraft from all parts of Australia and the world in the air and heading for Sydney Airport.

Managing Risk & Reward

Common Risks

<table>
<thead>
<tr>
<th>Risk</th>
<th>Client</th>
<th>Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Quality</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Cost</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Time</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>People</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>Reputation</td>
<td>✔</td>
<td>✔</td>
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</tbody>
</table>

Risks are aligned, good outcomes from working together

Pre-Construction & Mobilisation

Cost Influence Curve Sydney Airport

- Sydney’s busiest airport in terms of annual aircraft movement (320,000) and passenger transit (37mil).
- The airport carries traffic from 28 regional, 23 domestic and 46 international destination making it one of Australia's most important pieces of infrastructure.
- Sydney airport has 3 runways:
  - Main North/South (16R/34L)
  - East/West &
  - Third runway.
- Runway 16R/34L is 3,962m long and only 1 of 4 commercial runways capable of landing a space shuttle.
- By the time the paving shift is underway there will be more than 50 aircraft from all parts of Australia and the world in the air and heading for Sydney Airport.
Building something great™

Construction ‘Smarts’ – Quality Control

GPS Compaction System

Construction ‘Smarts’ – Level Control

Laser Survey System

Building something great™

LEAN Contracting

Waste Removal
TIM WOOD

Transport
Inventories
Movement
Waiting
Overproduction
Defective Parts

“High stress but enjoyable”

“We were very proud of our achievements”

“Very proud of our achievements”

Building something great™

Project outcomes

365
Number of people inducted to work on the project.

6.5
Maximum time allowed onsite during nightly curfew.

255,000
Total area of Re-sheet.

45,000
Total volume of asphalt supplied to the project.

~99%
Compaction Compliance.

9
Calendar months worked.

Building something great™

Fuel Resistant (FR) Asphalt

• Boral FR binder meets A35P specs
• Boral FR asphalt
  - can be produced at all plants
  - available in quantities > 2 tonnes
  - resistant to diesel & Jet A1 spillage
Perth Airport trials with AC14 mix showed
  - Boral FR binder vs. Multigrade was:
    - Fuel resistant
    - 4x more fuel resistant (mass loss)
    - Wheel tracking
      - 80% more cut resistant
    - Resilient Modulus
      - 10% higher modulus

After 24 hour soak in diesel

C320
Boral FR
Recent Airports Experience

- Boral Asphalt has built a strong reputation delivering successful Airport projects over the last decade.
- Airport Projects have been undertaken across Australia and the Pacific Islands.
- Mt Gambier Video (5.24 min).

Summary

- The Sydney Airport Project was a strong and successful partnership between Asset Owner, Contractor & Sub Contractor.
- Boral delivered a successful outcome whilst managing the multiple levels of complexity and risk.
- Boral’s Project Management Systems incorporating Lean Management, Quality System, Occupational Health & Safety Controls, Environmental Controls & on the ground planning and delivery capability were instrumental in achieving this.
- Boral has a national capability backed by regional delivery to execute Airport Projects of any size. We also demonstrate a unique integrated quarry position and are backed by experienced Technical resources.
- Boral has demonstrated airports experience for well over the last decade and delivered value for money outcomes for our customers.

Thank You

QUESTIONS

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Balancing Risk and Reward

<table>
<thead>
<tr>
<th>Sq M Rate</th>
<th>Lump Sum Price</th>
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<tbody>
<tr>
<td>Style of contract</td>
<td></td>
</tr>
<tr>
<td>Pre-Milling</td>
<td>Lighting</td>
</tr>
<tr>
<td>Truck Routes/ capacities</td>
<td>No site plant</td>
</tr>
<tr>
<td>Conditions of contract</td>
<td></td>
</tr>
<tr>
<td>- Consequential loss</td>
<td>- Weather</td>
</tr>
<tr>
<td>- Unlimited liability</td>
<td>- Site &amp; plant risk</td>
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PROJECT DELIVERABLES

TIME

COST

QUALITY

Risk

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Risk
Building something great™
Nationally Technically Competent

- National Business Planning
- Key Account Management
- Asset Planning

Regional Management
- Account Management
- Opportunity Pipeline

Bid Team
- Tender Preparation
- Tender Submission
- Contract Execution

Delivery Team
- Project Controls
- Project Review
- Project Close-Out

CUSTOMER

REGIONAL MANAGEMENT

BUSINESS PLANNING

ACCOUNT MANAGEMENT

RELATED AGREEMENT

BID TEAM

TENDER PREPARATION

TENDER SUBMISSION

CONTRACT EXECUTION

DELIVERY TEAM

PROJECT CONTROLS

PROJECT REVIEW

PROJECT CLOSE-OUT

CUSTOMER

PROJECT

SCOPE

REQUIREMENTS

SOLUTION

CONTRACT

SERVICE

Construction – Quality Control

- Good Planning
- Good People
- Good Resources
- Good Communication
- Good Management

- Mix Design
- Materials Control
- Manufacturing Control
- Construction Process