Wellington International Airport Runway Overlay 2009.
Parties involved

- Fulton Hogan Wellington – Contractor.
- BECA – Consultant.
- Wellington international airport Ltd – Client.
Contract Scope

The contract works include:

• Set up mobile Asphalt plant.
• Full grid survey.

Separable portion A: 6 weeks
• Overlay stub 9 with 80mm thick asphalt (approx 3900m2).

Separable portion B: 22 weeks
• Mill and fill failed areas of pavement on runway.
• Rotormill grooving.
• Construction of a 50-78mm thick asphalt overlay, 117,600m2, approx 22,000T.
• Reinstate pavement markings.
• Regrade grass edge to match new asphalt level.
• Raise runway lights.

Separable portion C: 32 weeks
• Grooving of central 39m wide strip.
• Pavement marking 2\textsuperscript{nd} coat.
Contract Scope

- Length = 1960m.
- Width = 45m, plus tie into stubs.
Existing runway conditions

- High stresses on pavement caused by aircraft, which can weigh up to 70,000kg on take off.
Challenges and constraints

- Wellington International airport handled over 5 million passengers in 2008 which is around 110,000 aircraft movements on the single runway.
1). Working in an urban environment.

- Located in the Rongotai suburb of Wellington City.

- Mobile asphalt plant located adjacent to airport in busy residential/retail area.

- Noise restrictions and resource consent.
2). Hours of work

- The last international flight lands at 12:30am and the first leaves at 6:00am.
- Runway must be operational from 6:00am.
- Penalties for delays to flights:
  - Up to 7:00am - $4000.
  - From 7:00am to 8:00am - $12000.
  - From 8:00am to 9:00am - $28000.
  - From 9:00am onwards - $28000 + $16000(for each hour).
- If disruption to scheduled flights were to occur on more than one occasion the contract would be terminated.
3). Lighting and line marking requirements

- No more than 1 runway light was allowed to be left out after any nights work.
- All line marking had to be reinstated every morning.
- Approach lighting had to remain operational at all times.
4). Wellington wind !!
Plan for the worst, hope for the best.

- Back up Asphalt plant – Located 40mins drive at Belmont Quarry.
- Two of every piece of plant/ machinery.
- Day support operation.
- Safety and security plan in the event of emergencies.
- Briefings at the beginning and the end of each night to discuss forward programme and issues.
Typical nights progress: 10pm – 6:00am
10:00pm - Assemble at site office safety briefing

• Targets discussed.
• Safety Briefing.
• 600T of asphalt.
• 50m of finished runway plus 13m ramp.
• Confirm time of last flight.
11:00pm – Asphalt plant starts making mix, fills storage bins and trucks 90-100Tonne.
12:15am - Assemble all gear on western apron and wait for last flight.
12:45am – Milling machines start cutting keys at either end. Mills also scarify grooving across runway.
1:15am – Survey levels are taken and surface is sprayed with emulsion. Paver begins first run across runway.
4:30am – Paver finishes its last run and is removed, rollers continue to compact the mix. Runway lights reinstalled.
6:00am – Disestablish, line mark, and de-brief.

- Rollers finish compaction.
- Line marking reinstated.
- Runway cleaned of FOD, sweeper truck and “emu parade”.
- Runway signed off and de-briefing meeting held.
Summary

- Total cost of the upgrade was approximately $9.6m.
- Almost all Fulton Hogan Wellington departments were involved in some part of the construction.
- AC overlay was completed in 65 nights.
- There was minimal disruption to airport operations and no delay penalties were incurred.
Achievements

- For its work on the Wellington Airport Runway Overlay Project, Fulton Hogan received the New Zealand Airport Project of the Year Award 2009.
Questions