



Hon. Andrew Fraser MP  
Member for Mount Coot-tha



Treasurer  
Minister for State Development  
and Trade

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## **Airport Link completes largest 'jack box' operation in nation**

Two massive concrete boxes, the width of a rugby league field have been pushed under Queensland's busiest railway line without disruption to train passengers as part of the Airport Link project.

The completion of the largest 'jacked box' operation under the North Coast Railway line at Toombul was the largest of its type to be undertaken in Australia.

Traditional methods of tunnelling would have required up to 30 weekend track closures, affecting freight, city network and AirTrain customers.

However, the box jacking operation during which two purpose-built concrete boxes were pushed and pulled beneath the rail embankment in Kalinga Park was successfully completed without any disruption to rail services.

Treasurer and Minister for State Development and Trade Andrew Fraser said during the 36 day box jacking operation, up to 380 trains travelled over the railway embankment daily.

"This highly technical tunnelling method minimised disturbance to approximately 13,500 train trips on the popular North Coast Railway Line," Mr Fraser said.

"As one of the most complex engineering aspects of the project's construction, the jacking of the giant boxes was required to form part of the Airport Link tunnel.

"The boxes, 65 metre long, 12.5 metres high with a combined span of approximately 38 metres, were pushed approximately 55 metres into position them beneath the railway embankment."

Mr Fraser said while the actual jacking operation only took a couple of months beginning in April, the preparation was nearly three years in the planning.

"Before jacking work could begin, 48 canopy tubes were pushed through the embankment at Kalinga Park to form a platform providing stability to the North Coast Railway Line," Mr Fraser said.

"Two huge concrete boxes were then constructed beside the railway line, before hydraulic jacks and steel strands were used to push and pull the boxes through the rail embankment.

"As the boxes progressively moved forward, ten excavators sitting inside the boxes removed up to 50,000 tonnes of soil from the embankment.

"As part of noise mitigation efforts, the site was extensively fenced and local homes have been mitigated to minimise disruption to local residents.

"We thank all residents for their ongoing patience as construction continues."

Thiess John Holland Project Director Gordon Ralph congratulated the team of 225 people who successfully worked around the clock to complete the jbox jacking operation.

"To maintain stability of the rail embankment this work was done continuously for 864 hours straight," Mr Ralph said.

"Using a sophisticated laser level system, over 200 monitors were positioned along the railway line corridor to monitor any movement of the railway embankment and the tracks.

"Monitoring was undertaken by three automatic survey stations which relayed information via email or text message, 24 hours a day to key personnel.

"This operation is a complex engineering feat for the projects and I am very proud of what the team has achieved," he said.

"During the planning and execution of the box jacking, the TJH project team worked closely with officers from Queensland Rail. I would like to thank the QR team for their assistance during this important work."

CEO of BrisConnections Dr Ray Wilson said Airport Link was on track for completion in mid-2012.

"When Airport Link opens, it will be the first major motorway connecting Brisbane city with the airport and northern suburbs," Dr Wilson said.

"Airport Link will revolutionise the way motorists travel around Brisbane.

"The jacked box operation was an innovative solution put forward as part of our bid to the State Government as it allowed this vital piece of rail infrastructure to continue to operate during construction of Airport Link and it is a major milestone to see the work complete," he said.

The projects, which are being designed and constructed by Thiess John Holland, are part of a massive \$4.8 billion infrastructure investment on Brisbane's Northside.

<b>Box Statistics</b>	<b>Jack Box 1</b>	<b>Jack Box 2</b>
<b>Dimensions</b>	12.52 x 65.7 x 21.40 metres	12.52 x 61.3 x 16.70 metres
<b>Concrete</b>	4702 m3	3309 m3
<b>Reinforcement Steel</b>	1830 tonnes	1470 tonnes
<b>Jacking Capacity</b>	26,000 metric tons	22,000 metric tons
<b>Weight of Box</b>	11,500 tonnes	8100 tonnes
<b>No. of Days of Push</b>	17 days	19 days

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