



Case Study

EastLink

Certification:

ISO 9001: 2008
Quality Management
Systems (QMS)

ISO 14001:
Environmental
Management
Systems (EMS)

AS/NZ 4801: OH&S
Management Systems



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the
world** 

Eastlink: Working Together

**“Victoria’s
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Background

Victoria’s EastLink motorway is the largest urban infrastructure project ever undertaken in Australia. It connects the Eastern freeway, northeast of Melbourne, with the Frankston freeway 39 km to the south, and was completed in June 2008.

This area is home to over a million people, as well as more than 40% of Melbourne’s manufacturing and production activity. It is also home to environmental habitats such as the Mullum Mullum Valley and Dandenong Valley wetlands.

The complex design and construction included two 1.6km tunnels, 88 separate bridges, 17 major interchanges and a 40km shared-use path for pedestrians and cyclists.

To build any major road, you need an army of designers, planners, engineers and construction workers. The scale and timeline of this particular project meant that a large number of different companies needed to be involved.

Getting this road from point A to point B required a true test of not only how each company’s processes worked internally, but also of how those processes worked together.



A certified difference

NCS International (NCSI) is responsible for the auditing and certification of six of the companies involved in the project. The standards they meet include the ISO 9001: 2008 Quality Management Systems (QMS), Environmental Management Systems ISO 14001 (EMS) and OH&S Management Systems AS/NZ 4801.

Andrew Stotnicki was an independent auditor on the EastLink project, and could certainly see the difference these processes made.

“I conducted surveillances, quality and environmental standards checks.

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This was quite a different project, as I had to look at very detailed and specific parts of the project, such as bridge abutments,” he recalls.

“Companies that had a system in place certainly made it easier for me to audit. If records were already maintained and showed compliance, it was straightforward. It was obvious to me which companies were not certified.”

Unique challenge one: Scale and size

For many of the companies involved, the scale of the project was the biggest challenge. “Until EastLink came along, we hadn’t contributed to such a big project before,” says Katie McElhone, who was brought in to project-engineer the work for Fulton Hogan. “The challenge was in the sheer amount of asphalt required. And it all needed complete traceability; where it had gone, quality checks on levels, product sampling and density testing.”

Fulton Hogan placed over 600,000 tonnes of asphalt in the southern section of the freeway. They have been certified by NCSI to ISO 14001, AS/NZ 4801 and ISO 9001 for many years. “NCSI were definitely helpful,” Katie says. “They helped us give consistency and structure to our systems.”

Even for Australia’s largest construction materials supplier, **Boral**, the project was its largest asphalt project in Australia. “The volume and speed of the work meant we needed very close project management,” says Cameron McInnes, Technical Manager of Boral Quarries. “We set up a purpose-built 300 tonnes per hour asphalt plant next to the site - in total we invested over \$10million in new plants and equipment for the project.”

During times of peak demand, **Hanson Construction Materials** also supplemented quarry material and concrete supply. Although he admits their part in the project was not as complex, Craig Banthorpe, Regional Sales & Marketing Manager for Hanson, says, “Our quarry was closer, so financially it made sense to supply if the other companies couldn’t meet the demand requirements.”

Also certified to ISO 9001 with NCSI, Hanson was able to ensure its own quality processes applied. “Although EastLink’s testing requirements were onerous, we were able to test to their standards – mainly applying slump and crushing strength tests,” says Craig.

The scale of the project also affected other elements of construction. “We piled the foundations for around 80% of the 88 bridges involved in the project. It was certainly one of the largest projects we’ve been involved in,” says Ashley Tonkin-Hill, State Manager for **Wagstaff Piling**.

“We’ve been certified for many years to ISO 9001. Working on such a big project required constant program changes, and addressing design issues. We had all the documentation in place to handle this in-house with our regular internal audits.”

For geo-technical engineers **Douglas Partners**, the biggest challenge was resourcing such a large two-year project. “We worked with the contractor, Thiess/John Holland joint venture, and the design teams, Connell Wagner

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and PB/Hyder Consulting joint venture, providing all the geo-technical engineering specifications for the roads, and investigations and reports on technical matters ranging from road and bridgeworks to retaining structures, pavements and embankments,” says Peter McDonald, Principal with Douglas Partners.

“We sourced three senior people in the industry to work as project leaders, and dedicated a team of staff so it wouldn’t impact our other work. Having all our documentation and processes in place upfront certainly helped everybody.”



Unique challenge two: Environmental protection

One of the project’s biggest challenges was the initial local resistance to the environmental implications of the construction, particularly the devastation of unique flora and fauna in the Mullum Mullum Valley. The answer? Two 1.6km tunnels twin three-lane tunnels beneath the valley.

Grocon were responsible for all the ventilation hoods and shafts at either end of these tunnels. “The tunnels were the number one priority of the project,” recalls Paul dal Pra, who was Grocon’s Project Manager for EastLink. “We designed a specialised automated formwork so that no tunnel activity was disrupted, as work went on 24 hours a day.”

Grocon are certified by NCSI to ISO 9001 and ISO 14001. “NCSI certification certainly helped us keep our project management fees under control. Because of our procedures and systems, we could work with a smaller crew of 10 to 14 men. The foremen were already trained in all procedures and we didn’t need a full-time onsite project manager,” says Paul. “We could build to specification, conform to all building requirements, and meet budget. I’ve no doubt that helped us win the job.”

As well as protecting Mullum Mullum Valley, the EastLink development also created 70 wetlands to filter the rainwater running off the road surface, allowing new habitats for native species. 4.5 million plants and trees were planted in 480 hectares of landscaping around the freeway.

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Boral also implemented their conservation and environmental procedures during construction. All water on site was recycled, its asphalt plant also recycled asphalt from local roads, and its new asphalt load out facility was the first of its type to have a fume filtration system, reducing odour emissions. On completion, the entire site was returned to its original rural state.

Winning tenders: with NCSI certification

All companies involved in EastLink agree that certification was essential to winning their part of the project. Katie McElhone (Fulton Hogan) says, “to win the contract, traceability and quality were key elements. Certification to best practice standards was crucial.” She would have no hesitation in recommending the process. “It’s positive recognition, and it gives the client confidence that our systems are being checked by an external person.”

For Douglas Partners, working with the different design companies and contractors meant that understanding the way quality assurance works was invaluable. “We had to comply with the designers’ quality systems, and review processes, but we could use our own systems to review work internally,” says Peter McDonald.

Cameron McInnes also found that third-party certification was part of the pre-qualification process for Boral’s tender. Craig Banthorpe (Hanson Construction Materials) furthered this observation, stating; “certification is just a pre-requisite for doing business now. I often have to submit a scanned copy of our certificates with our tenders.”



Results: Building new business

Since the EastLink freeway opened, NCSI’s clients have won new projects as a result of their involvement. Fulton Hogan has now started work on the Northern Expressway in South Australia. “Our performance on EastLink had

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a big impact on that win. It involves the same level of productivity, and we’re applying the same processes,” says Katie McElhone.

Wagstaff Piling is working on another Victorian road project, the widening of the Westgate freeway. Douglas Partners have developed geo-tech engineering specifications for a number of large road projects since EastLink was completed; “Having our name associated with such a large-scale project certainly hasn’t hurt,” says Peter McDonald.

Paul del Pra uses the solutions Grocon put in place when developing the tunnel shafts as a way to explain to new clients their capabilities and approach. “It wasn’t a huge job in terms of what we do, but it had a lot of challenges, and the fact that we were able to avoid any disruption to other parts of construction helps us win new projects,” he says.

The freeway was completed in just 44 months, five months ahead of schedule. The teamwork between these organisations, and the systematic processes that founded their decisions, certainly contributed to this outstanding result. The project effectively combined an individual commitment to quality, safety and the environment, with a dedicated group effort to make the road a reality.

Useful Information:

To find more information about the Eastlink motorway visit:

<http://www.eastlink.com.au/>

To visit the websites of our clients visit:

<http://www.wagstaffpiling.com.au/>

<http://www.boral.com.au/>

<http://www.fultonhogan.com>

<http://www.hansoncm.biz/>

<http://www.grocon.com.au/>

<http://www.douglaspartners.com.au/>

For more information on how NCS International can assist you with your certification or provide you with a quote please visit www.ncsi.com.au or call **1300 856 554**.