



60
YEARS

quarterly**review**

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people performance profit partnerships

trifecta win

Along with joint venture partner Thiess, John Holland has won the 2009 Australian Construction Achievement Award (ACAA) for delivering the \$2.5 billion EastLink project. This is the third time since 2004 that John Holland has won the Award. Previous wins were for the Darwin to Alice Springs Railway project and the Melbourne Airport Runway Main Construction Works project.

Jointly organised by the Australian Constructors Association and Engineers Australia, the ACAA is one of the

most prestigious prizes in the construction industry.

Opened almost six months ahead of schedule, EastLink was developed to relieve traffic congestion in Melbourne's eastern suburbs. Chair of the 2009 ACAA judging panel, Professor Archie Johnston, described it as "exceptional across all the evaluation criteria."

"The successful delivery of the EastLink mega-project demonstrates that our construction industry is amongst the best in the world," he said.



onsite: Professor Archie Johnston, Project Director Gordon Ralph and Sir Rod Eddington at the 2009 ACA Awards

accolades continue



onsite: The multi-awarded Eleanor Schonell Bridge

Already multi-awarded, Brisbane's Eleanor Schonell Bridge won the Large Bridges category and the overall Gold Award at the Austroads Bridge Awards in May. The 390 metre bridge spans Brisbane River, linking Dutton Park with the University of Queensland in a "spectacular way", said the judges, who praised its "innovative design and careful material selection".

John Holland was the design/build contractor and worked closely with GHD, Brisbane City Council and the University of Queensland to deliver the \$56 million cable-stayed bridge, which locals call Green Bridge. It is the first Australian bridge to be exclusively designed for pedestrians, buses and cyclists and includes green concepts such as a solar canopy and provision for



a future light rail system.

The pedestrian lanes are cantilevered to the outside, reducing the weight of the transverse floor beams and of the structural steel required. The lighter weight helped John Holland to speed up erection time and complete the bridge ten weeks early.



digging for innovation

WHILE WORKING ON THE SUGARLOAF PIPELINE PROJECT, JOHN HOLLAND'S TUNNELLING BUSINESS IDENTIFIED A MAJOR HANDLING RISK. THEIR INNOVATIVE SOLUTION AGAIN PROVED THAT IMPROVING PERFORMANCE AND PROTECTING WORKERS GOES HAND IN HAND.

When completed in 2010, the 70 kilometre Sugarloaf Pipeline will link Goulbourn River to Melbourne's Sugarloaf Reservoir. John Holland is constructing most of it using open cut and trenching methods, but the steep land of the Toolangi State Forest required a tunnel.

Faced with boring through hard rock, silty clay and boulders, the tunnelling team selected a German Tunnel Boring Machine (TBM) with a hard rock head. The machine jacks precast concrete pipes along the tunnel behind the TBM as excavation proceeds. At 826 metres, this is the second longest pipejack tunnel in Australia.

Manoeuvring the three metre long, two metre diameter pipes meant operators

would sometimes have to work at heights of four metres or more without fall protection. Aware that falling from heights causes nearly 19 per cent of industry injury claims, Project Manager Sam Jones and his team conducted a risk assessment then consulted with a firm of engineers to design and build a unique, customised mechanical pipe lifter that removed the risks.

"By reducing manual handling and allowing operators to work at ground level, the pipe lifter contributed to our zero incidence rate for falling from height injuries," reported Sam. "It also enhanced our overall performance because it was simple to use and moved pipes with minimal effort."



onsite: "Ollie" the Tunnel Boring Machine is moved into place. Shannon Ward (left), Neville Rangikauhata (centre) and Tanka Limbu (right) at the Southern Shaft Site

Using this innovative solution, tunnel excavation was completed in mid-June, well ahead of program. The Sugarloaf Pipeline is being constructed by an alliance comprising John Holland, Melbourne Water and designers SKM and GHD.



blue water high

TO GUARD AGAINST DROUGHT, POPULATION GROWTH AND CLIMATE CHANGE, STATE GOVERNMENTS ACROSS AUSTRALIA ARE TURNING TO DESALINATION TECHNOLOGY TO SECURE WATER SUPPLIES FOR THE FUTURE. JOHN HOLLAND IS AUSTRALIA'S MOST EXPERIENCED CONTRACTOR IN DELIVERING THESE COMPLEX PROJECTS AND IS CURRENTLY WORKING TO DELIVER THE TWO LARGEST PLANTS ON THE EASTERN SEABOARD.

The Gold Coast Desalination Plant is currently supplying water into the South East Queensland Water Grid and once fully completed has the capacity to supply up to 133 megalitres a day of pure drinking water. John Holland is designing, constructing and commissioning the plant in a joint venture with international water services provider Veolia Water and designers SKM and Cardno. John Holland and Veolia are also partners in the Blue Water Joint Venture, which is designing, building and operating the Sydney Desalination Plant for Sydney Water Corporation. By mid-2010, the plant will be delivering up to 250 megalitres a day - 15 per cent of Sydney's daily water supply.

The desalination technology used in these plants is Reverse Osmosis which involves forcing seawater through membranes under high pressure that effectively separates the fresh water from the seawater. This process of separation, treatment and distribution involves multiple phases and requires complex equipment and structures. According to Greg Taylor, General Manager of John Holland's Water business, the construction of

desalination plants utilises systems and processes that are unique to the industry.

"They demand an in-depth understanding of new water technology and advanced materials, along with specialist skills such as tunnelling and civil construction expertise common in major infrastructure projects," he said. "The diversity of John Holland's business ensures we can place specialist teams to competently deliver each aspect of the construction process."

Marine and Tunnelling milestones

Underway since 2007, the Sydney Desalination Plant is scheduled for completion by mid-2010. John Holland is active at three main sites. A large construction team based at Kurnell is building the desalination plant; while the tunneling team has recently completed the intake and outlet tunnels that will draw seawater and return the brine to the sea. The marine team has been operating at a third site at Port Botany, which is both the base for the offshore marine works and a materials handling and manufacturing site for the inlet and

outlet structures.

Project Director John Barraclough reports that everything about the project is large-scale.

"One example is the two 2.5 kilometre tunnels that connect the desalination plant to intake and outlet structures in the ocean," he said. "Both tunnels have a 4.2 metre excavated diameter and an internal lined diameter of 3.4 metres. Despite working 23 metres below the sea bed and hitting geological hazards, the Tunnelling team finished one month ahead of schedule."

Two 140-metre long Herrenknecht tunnel boring machines (TBMs) excavated, grouted and lined the tunnels. In total, the two TBMs installed 22,800 segments, each weighing 1.2 tonnes. The team also removed 70,000 cubic metres of rock and spoil.

"With the demand for tunneling projects globally our clients benefit from John Holland's strategic relationships with TBM suppliers," said John. "Our knowledge and experience in tunneling ensure our work processes generate maximum levels of efficiency in project delivery."

making connections

AS A MEMBER OF SYDNEY WATER'S PRIORITY SEWERAGE PROGRAM (PSP) ALLIANCE, JOHN HOLLAND IS ENABLING THOUSANDS OF UNSEWERED PROPERTIES TO CONNECT TO URBAN SEWERAGE SYSTEMS. THE ALLIANCE'S SUCCESSFUL PERFORMANCE SO FAR HAS RESULTED IN THREE NEW PSP CONTRACTS TOTALLING \$184 MILLION.

"Approval of these new projects reflects the outstanding performance of the alliance team, who have consistently improved cost and delivery efficiency while maintaining the highest standards of safety, quality and community engagement," said Greg Taylor, General Manager of John Holland's Water business.

The PSP Alliance is being delivered by Sydney Water in conjunction with John Holland, MWH Australia, United Group Infrastructure and Manidis Roberts. The three new projects will improve sewerage services in Sydney's north-west, with two schemes transporting wastewater directly to Richmond Sewage Treatment Plant.

For the 'Three Towns' scheme, John Holland will construct over 116 kilometres of pipeline, including a 760 metre pass under Hawkesbury River, to connect up nearly 1,600 homes and businesses in Glossodia, Freemans Reach and Wilberforce. The Agnes Banks and Londonderry scheme will improve the environmental performance of existing wastewater infrastructure, and involves the construction of about 15 kilometres of pipes serving 290 households.

The third project will link Yellow Rock and Hawkesbury Heights with Winmalee Sewage Treatment Plant, improving sewerage services available to approximately 360 unsewered properties.

All three projects should be completed by March 2011. Learn more about John Holland's new PSP Alliance work at www.johnholland.com.au

"The Tunnelling team finished one month ahead of schedule by working 24/7 in shifts for four months"

Recently the marine works team finished positioning the intake and outlet structures on the sea floor and drilling the riser shafts connecting the structures to the tunnels below. The intake structures are 5 metres high and 10 metres in diameter while the outlet

screening drums, a 132 kV switchyard and an administration building.

Here too, the statistics are impressive. The civil works team placed 76,000 cubic metres of concrete and 13,500 tonnes of reinforcing steel, and fabricated and erected 3,000 tonnes of structural steel. The mechanical and electrical teams have overseen the supply and installation of more than 3,000 mechanical items; the



structures are 3 metres high and 6 metres in diameter.

"The marine crew had to contend with constant high swells," said John. "Being so close to the shore also added to the challenges of the job, however all marine works have been completed successfully thanks to the expertise and professionalism of our team."

Near the end

Meanwhile, the desalination plant is 80 per cent complete. John Holland is building the reverse osmosis facility, pre and post-treatment plants, drinking water storage tank, stormwater retention basins, waste water treatment facility, intake pump station and

construction of more than 32 kilometres of pipework; supply and installation of 200 pumps; and the installation of more than 906 kilometres of electrical and data cables.

With the Gold Coast Desalination Plant nearing completion and the Sydney Desalination Plant well advanced, John Holland's Water business is Australia's most experienced contractor in delivering major desalination facilities and is well positioned to support any future desalination projects. John Holland, together with Veolia Water, is part of the BassWater consortium bidding for the Wonthaggi Desalination Plant in Victoria.

onsite: Seafox 6, Sydney Desalination Plant. From left: Rachard Cachia and Tristan Lord