



PERMAcast - Engineered for Efficiency

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National Precast Member PERMAcast is playing a major part in one of the country's largest resource projects. The Wheatstone Project is a Liquefied Natural Gas plant under construction, in the Ashburton North Strategic Industrial Area, 12 kilometres west of Onslow in Western Australia's Pilbara region. The foundation will include two LNG trains with a combined capacity of 8.9 million tonnes per annum, as well as a domestic gas plant.

The WA precaster is a vital part of the Wheatstone Project and has won the tender to supply precast trench units to Laing O'Rourke after a long, competitive and consultative tender process. Precast will be supplied for the ISBL and OSBL Concrete and Civil Works.

PERMAcast Sales and Marketing Manager Rasmus Sorensen says since expanding core capabilities in 2008, the company has focused on supplying customised products to meet exact specifications for clients in the mining and resource, infrastructure and oil and gas sectors.

"Not only does this project require a large scale modern precast manufacturing and storage facility, but this project is also technically very challenging," said Mr Sorensen.

The precast involves more than 1000 individual trench units. The plan was to originally cast the trench unit's in-situ.

PERMAcast was able to assist the clients in coming up with an alternative design offering cost savings and efficiencies. PERMAcast's in-house engineers developed efficiencies in manufacturing methodologies to enable

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the trench culverts to be produced off site. The precast solution will see the trenches manufactured in PERMAcast's ISO 9001 Quality controlled factory environment.

No two units are the same, with the average unit being 19 tonne. Variable falls mean every trench unit has to be cast not only with the required gradient for drainage in the floor of the unit, but also to accommodate variable heights for ground level.

To cater for a potential emergency overflow of supercooled natural gas, 560 lineal metres of the trench will require lining with a perlite insulating concrete. Instead of containing normal aggregate, perlite concrete contains Portland cement, perlite aggregate and water. Perlite aggregate is an exceptionally light weight aggregate. It has a very low strength, which creates a raft of casting and handling challenges. The perlite concrete will be anchored to the inside face of the precast trench units, using 20,000 bolts.

"Finding a more efficient solution for the trenches once again demonstrates how the precast industry is able to accurately respond to crucial design specifications and initiate engineering efficiencies, which ultimately provides cost benefits for a project," Mr Sorensen said. In this case, Mr Sorensen says winning the Wheatstone tender precast package strengthens the company's position within WA.

"We have a history now as one of Western Australia's leading suppliers of precast and prestressed concrete products for some of the state's most prestigious infrastructure, oil & gas and resource projects. Our clients draw confidence from our proven ability to deliver technically challenging products on time and to specification."