

# Gorgon Manholes



## A GATEWAY TO THE UNDERGROUND

Precast concrete manholes have become the construction industry's product of choice over in-situ products. That's certainly been the case for one of Western Australia's major resource and infrastructure projects, the Gorgon Project.

Developed by Chevron, Gorgon is one of the world's largest natural gas projects and sits up there among the largest single resource developments in Australia's history. The project is located on Barrow Island, a Class A nature reserve 60 kilometres off the coast in north-western WA. It includes a liquefied natural gas facility and a domestic gas plant capable of supplying 300 terajoules of gas per day to the Western Australian population.

But it's under the ground where precast has played a vital role, where 610 precast concrete manholes provide access to underground pipes.

## CAPABILITIES ESSENTIAL IN AWARDING CONTRACT

Given the number and size of the manholes, Leighton Contractors needed to award project's precast package to a precast manufacturer that had the required expertise and an extensive manufacturing capability. The requirement was for a precaster with a strong track record supplying major infrastructure, oil and gas projects – one with a highly skilled and technically competent engineering team as well as a large-scale precast facility that not only had manufacturing capacity but a large storage facility as well.

**Precaster**  
PERMAcast

**Builder**  
Leighton Contracting

**Client**  
Chevron

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Perth-based precast concrete specialist and National Precast member PERMAcast was awarded the contract to manufacture and supply the manholes, together with conversion slabs and access shafts for the project.

With its highly skilled and experienced team of in house engineers and a stringent quality management system, the company was able to ensure that all products were designed and manufactured to specification.

“Even though no two manholes were the same, we were able to meet supply requirements,” explains PERMAcast Managing Director Alberto Ferraro

“The sheer volume of products might have been difficult in terms of storage for other precasters, but we have 250,000m<sup>2</sup> of storage area, so for us it was no problem”, he said.

## **PRECISION TO MEET QUARANTINE REQUIREMENTS**

The 610 manholes each weighed between 15 and 20 tonne, manufactured to a +/- 5mm tolerance and measuring on average 1500 x 1500 millimetres internally.

Being a Class A nature reserve, the quality and finish of the manholes was critical for the project. To prevent the introduction of non-indigenous animals and plants into the area, a best practice quarantine management system set an unprecedented level of quarantine benchmarks. A high quality finish was necessary to minimise the risk of introducing non-indigenous insects. Each manhole was manufactured with a single pour, to ensure no joints and therefore no potential for leaks.

“Neither the quantity nor the quality was an issue for us at all,” said Mr Ferraro. “Our team is always up for a challenge”.

## **ADDING VALUE**

“We also managed logistics between our company, Leighton and their sub-contractor. Those skills added value to the project in terms of construction efficiency,” said Mr Ferraro. As well, the company supplied and installed the ladders for the manholes. “We always value add where we can”.

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