AIRPORTS

BRISBANE AIRPORT NEW PARALLEL RUNWAY

Vertical Wick Drains

AUSTRALIA

Owner
Brisbane Airport Corporation
Engineer
Golder Associates
General contractor
Jan de Nul
Period of works
May 2014-October 2014

Main figures

Vertical drains
330,000 wick drains ranging in depth from 16 m to 40 m
Largest wick drain project ever undertaken in Australia

Project description

The Brisbane Airport is upgrading its capacity by constructing a new runway (to open in 2020) and expanding its terminal. As part of this project, Menard in joint venture with Soil Wicks Australia were contracted by Jan de Nul for a construct only project with a 6 month-time frame.

Ground conditions

This future runway will be constructed on reclaimed dredged sand. 13 million cubic meters of dredged sand will be placed by Jan De Nul, head contractor of the project.

It was required to find a solution for the consolidation of the underlying waterlogged soils.

Solution

Vertical wick drains technique was chosen as the most efficient and cost effective solution for treating the runway site. Indeed, vertical wick drains will accelerate the settlement of the dredged sand platform. The settlement time will be reduced to 3 years instead of more than 5 years without wick drains.

The works consisted in the supply and installation of over 8.2 million linear meters (approx. 8,200 kms) of prefabricated vertical drains across 17 different areas covering 65 hectares. This represents approximately 330,000 individual wick drains ranging in depth from 16 m to 40 m with an average of 26 m. This makes the largest wick drain project ever undertaken in Australia.

In order to complete the works with a very short period compared to the scale of the job, Menard & Soil Wicks Australia supplied 5 rigs for the project, working double shifts 6 days a week. 2 of the 5 rigs were fitted with 42 m vertical masts.

The JV successfully achieved this project and safety performance was excellent with zero lost time injuries recorded across over 40,000 man hours.