

Hatch wins awards for QMM ilmenite project

Consulting engineering and project implementation firm Hatch's involvement in Rio Tinto's QIT Madagascar Minerals (QMM) ilmenite project saw its wet plant team of innovative design engineers clinching first place in the export category of this year's prestigious South African Institute of Steel Construction (SAISC) Awards (as we reported in our September issue). The project was executed by the Mandena Joint Venture (JV), in which Hatch and Fluor were partners.

As a direct result of the work put in by Hatch's civil/structural engineering team, the QMM project overcame logistical problems, as well as various wet- and dry-plant design challenges. "Owing to the remote location of the project, every single component that was used in the development and construction of the mine had to be imported," says structural lead engineer Morné Fourie. "Everything that needed to be on site had to be sent either by ship or plane."

What's more, the unavailability of a commercial port required that the existing port be dredged and deepened. The pier and quayside also had to be modified, allowing barges to enter. Hatch logistics controller Esté Visser explains that cyclones in the region resulted in the loss of two barges, forcing the company to mobilise additional barges in an effort to have minimum impact on the project schedule. In addition, the size of the available runway meant that only smaller aircraft could be accommodated and landing could only take place during daylight.

The condition of the roads from the port and the airstrip to the site of the project posed yet another serious challenge. The first available route ran straight through the middle of Fort-Dauphin, a main town with an estimated population of nearly 46 000 people. Route surveys were carried out, which resulted in a deviation of the road around the town. "Due to an agreement between Rio Tinto and the Madagascar government, which stated that all activities revolving around the project be sustain-

able, the areas where roadwork construction took place had to be rehabilitated upon completion of the road. What's more, part of the project construction phase fell in Madagascar's rainy season, resulting in a three week trip for trucks travelling from Tulear port to the site. In the dry season, this journey would normally average seven days," explains Visser.

Before construction of the mine could commence, the Mandena JV was required to design and build extensive ancillary services and infrastructure – including a power station, housing estates, construction villages, a road network, water supply and communications networks. Following on from this, Fourie notes that the team was also commissioned to design and build a wet plant, consisting of a floating platform, and a dry plant, comprising drainage bays, dry mill buildings and a filter building. The initial amount of fabricated steel, equipment and other material that was required to be shipped was 154 000 freight tons.

In addition to the SAISC Award, the project has also won the Rio Tinto Global CEO Safety Award for being completed with more than 12 million lost time injury (LTI) free man-hours.

Hatch's engineering team improved workflows and reduced costs by deploying various computer-aided engineering programmes. Streamlining the 2-D drawing delivery process also expedited steel fabrication and improved the critical path schedule for construction. This resulted in the Hatch engineering team winning yet another award – the Bentley Systems' 2009 'Be Inspired Award'. The QMM project was recognised in the category of Innovation in Mining and Metals, which recognises both short-term and long-term benefits that arise from extraordinary efficiencies in engineering, construction, and operations of mines and metals-processing and refining plants.

For optimum efficiency, Hatch deployed Bentley Structural, PlantSpace and Bentley Navigator on the project. ■