# Precast concrete technology comes out tops on critical water projects

M&D Construction Group recently selected Corestruc to assist with the supply and installation of hollow-core slabs for the roof of the new Sondela Booster Pump Station in the North West Province.

This facility increases the conveyance capacity from Klipdrift Water Treatment Works to Bela-Bela and Modimolle Local Municipality to 24 ML/day, and M&D Construction Group's scope of work also includes constructing the 5,4-km-long cement-mortar-lined pipeline that extends from the pump station toward Bela-Bela.

The project is being undertaken on behalf of Magalies Water and the consulting engineer on this project is Endecon Ubuntu.

M&D Construction Group site manager, Mario Lawrence, says that his team suggested precast elements as an alternative to in-situ methods to build the roof right in the very early stages of the works programme.

"We agreed that hollow-core slabs proved to be the best solution, both in terms of improving our production rate on site and, importantly, saving costs for our client. Magalies Water and the consulting engineer accepted our proposal, and we then selected Corestruc to assist us based on our past experience working with the company," Lawrence says.

Installation of the slabs commenced once M&D Construction Group completed the structure, comprising in-situ columns and ring beams with a brick infill.

As the hollow-core slabs could be installed without any propping, it did not form part of the critical path of the works programme.

***Corestruc's hollow-core slabs, each being at least 60 MPa, contribute to creating a more robust structure.***

Corestruc's scope of work started with assisting the contractor in the design of the optimal layout of the roof structure.

The high-quality hollow-core slabs were then manufactured using state-of-the-art extrusion technologies at the company's precast concrete factory. Each element has a concrete strength of at least 60 MPa and, therefore, also contributes towards a more robust final structure, which houses the valuable mechanical equipment used to pump the fluids.

Corestruc also ensured the timely delivery of the items to avoid delaying the construction programme and, in this instance, used Corehire's 70-ton knuckle-boom mobile crane and operator to safely lift and place the elements onto the mortar bedding.

The company's installation team comprised one foreman and five workers, who are able to place an element every six minutes to ensure optimal production rates.

He says that that this approach to building the roof of the structure shaved as much as three weeks off the booster pump station construction programme, which allowed the contractor sufficient time in which to complete the mechanical aspects ahead of the commissioning of the facility.

Lawrence says that the project was not without its challenges. "Most of the complexities arose during the very early phases of the build. This includes having to blast to clear the hard rock that was encountered 1,5 m above the four metre-deep pump-well excavation level. However, the build proceeded effortlessly once we were out of the ground and we are, therefore, well ahead of schedule," he says.

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Corestruc also worked alongside M&D Construction Group on the 50-ML Mafenya reservoir in the North West province.

Excellence in in-situ construction combined with that of cutting-edge precast concrete skills and capabilities helped deliver a project that continues to receive much acclaim, including a showcase position at last year's Fulton Awards.

Willie de Jager, managing director of Corestruc, concludes that he is proud to have been associated with another M&D Construction Group project that has once again reaffirmed government's commitment to infrastructure development in South Africa.■

***More information from Corestruc,***
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