

Mount Edgecombe Interchange, KZN

COUNTRY: SOUTH AFRICA
DATE: APRIL 2017



Left: Cable Stay and Bolt-on Walkway installation **Above left:** Main pylons, back span piers and pedestrian access ramp columns. **Centre:** Lees Street Bridge, RESA wall approach ramp and pedestrian ramp. **Above right:** Pedestrian walkway to side of main span of Cable Stay Bridge.

PRODUCTS USED

CHRYSO® OPTIMA 175, CHRYSO® OPTIMA 100, CHRYSO® PLAST 900, CHRYSO® DEM OLEO FW, CHRYSO® CURE WB

DESCRIPTION

Traffic studies showed that the existing Mount Edgecombe Interchange had exceeded its design capacity and that the current growth in the area would demand a full upgrade to free-flow traffic conditions due to severe traffic congestion during peak traffic periods. Incremental launching was the construction method of choice for the top two levels of the interchange as it was deemed the fastest and safest method. The absence of support staging allowed for significant financial savings and provided a more environmentally friendly option. A total of nine bridge structures were designed and constructed for the project: Two ILM viaducts, two twin-spine cast in situ bridges, one overpass widening, two underpass lengthening's and a new pedestrian bridge.

PROJECT SPECIFICATION

Concrete is used to enhance the aesthetics of thirteen retaining structures, demonstrating concrete's versatility as both a structural component and an aesthetic feature. A combination of textured and plain precast concrete panels are strategically placed as cladding panels for the mechanically stabilised earth walls and also seamlessly incorporated with in situ concrete elements. The innovative use of precast concrete paneling to clad the soil nail walls has notably changed the aesthetics of usually unsightly soil nail walls to a modern and neat system that would be preferred by most clients.

PROJECT CHALLENGE

Concrete in most of its forms, consistencies and strengths have been utilised on this project. From overcoming challenging geotechnical conditions to proudly 'launching' this project into the record books, the versatility of concrete is highlighted, at Mount Edgecombe Interchange, as the key-stone material in the arch that bridges the divide between economy and reliability as well as form and function.

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- Client: South African National Road Agency Ltd ■ Principal agent: SMEC Consulting Engineers
- Main Contractor: CMC Di Ravenna South Africa Branch