

# Media Release



## **SMEC South Africa celebrates two wins at SAISC's Steel Awards**

**Thursday, 22 October 2020**

Engineering and infrastructure consultancy firm SMEC South Africa's Structures Team received top honours at the prestigious Southern African Institute of Steel Construction's (SAISC) Steel Awards 2020 for the design and build of the V&A Waterfront swing bridge, located in South Africa's oldest working harbour.

The Project Team was awarded first place in the Bridges Category and was selected as the Overall Winner for the Steel Awards – a coveted win for the team, considering the awards adjudication panel received over 45 entries across nine categories.

The Structures team was engaged by V&A Waterfront Holdings (Pty) Ltd as the lead design firm and structural engineers, working in conjunction with COA Architects and Eadon Consulting, for the replacement of a 22-year-old swing footbridge.

The smaller swing bridge, built in 1997, was a beautiful and materially efficient structure that impressively opened and closed up to 60 times a day. However, with the further expansion of the Waterfront, the number of people crossing the cut was increasing yearly. The previous 2m wide walkway, which once seemed appropriate, was by 2016 carrying 2.4 million people per year. To keep

pace with the demand, a new, wider bridge was commissioned.

The design team worked through various options for the new link. Among those considered were a bascule and lift bridge; however, it was deemed that a swing bridge would still be the best solution in terms of the speed of operation and electrical energy needed to operate it. Important performance specifications included 1) the bridge being capable of operating in wind speeds of up to 60km/h, and 2) the bridge being designed for impact by a vessel from both directions and be able to swing free in such an instance so as to protect the mechanical equipment.

The new 4m wide swing bridge has a span of 40m. The deck is cable-stayed with a single plane of four locked coil cables connecting to a central, upstand spine beam. The spine beam is 500mm wide and has a total depth of 800mm, but only 470mm protrudes above the top of the deck. The reclining pylon is in the continuity of the main central beam and its stiffness transfers the cable loads into the piled substructure. The steel with timber deck is rotated on a slewing bearing, which is stressed down onto a doughnut-shaped pile cap by 34 vertical Freyssibars. The bridge is supported on eight piles, positioned in a ring.

The project, which was delivered within very tight commercial and time constraints, was split into two stages to ensure that construction works did not run into the V&A's peak periods. The piling works was first built under one contract and then buried in sand and the area re-paved until the superstructure contract was activated the following year.

The Project Team together with the V&A Project Managers put significant thought and effort into minimising disruption to the V&A. Safe access across the cut for the public was maintained using the old swing bridge for all but four weeks of the construction works – a major achievement that required innovative thinking. The new V&A Waterfront swing bridge was officially opened to the public on 11 July 2019.

**ENDS**

**Contact: Kelly Lewis on +27 11 369 0600 or [kelly.lewis@smec.com](mailto:kelly.lewis@smec.com)**



### **About SMEC:**

SMEC is a global engineering, management and development consultancy delivering innovative solutions for our clients and partners. Leveraging our 70-year history of delivering nation-building infrastructure, we provide technical expertise and advanced engineering services to resolve complex challenges across the project lifecycle, from initial concept, feasibility, planning and design through to construction, commissioning, and operation and maintenance.

In 2016, SMEC joined the Surbana Jurong Group, which is headquartered in Singapore and has a global workforce of over 16,500 employees across 120 offices in more than 40 countries in Asia, Australia, UK, the Middle East, Africa and the Americas.