**PRESS RELEASE**

Impressive Walking Wonder embodies intuitive design and practicality

***06 November, 2014:*** *Global engineering consultancy firm SMEC was awarded a commendation at the 2014 CESA Aon Engineering Excellence Awards, in the category less than R50-million, and a commendation at the Steel Awards in the Bridge Category for its involvement in the development of the iconic Isando Pedestrian Bridge.*

The structure is a self-anchored cable stayed bridge designed to be aesthetically pleasing and economical at the same time. It is one of the largest pedestrian bridges in South Africa and provides safe passage over the R21 highway to thousands of commuters in Johannesburg on a daily basis.

A main feature of the bridge is the two un-braced cigar shaped steel pylons. One leans forwards at 11o and the other leans backwards. **John Anderson**, SMEC South Africa functional head of structures states that the layout of these pylons is what led to the bridge being named the Walking Wonder.

The bridge connects the Isando Rail Station and OR Tambo International Airport, and replaces two footbridges that were built during the 1970s. Anderson observes that the new footbridge is a vast improvement over the previous structures and is used by approximately 9 000 commuters each day.

“A lot of consideration went into designing the Walking Wonder, as it was necessary to link the rail, taxi and pedestrian transport modes,” says Anderson. “Significant effort was invested in conceptualising the functionality of the bridge to ensure it can be used and accessed by everyone. To ensure the safety of all those who use the bridge, the design incorporates multiple access points,” he continues.

The Walking Wonder features a walkway that is 5,4 m wide and offers sufficient space for the commuters who use the bridge during the peak hours of the morning and afternoon. The total length of the bridge is 126,4 m. The main span of the bridge is 64 m long and is supported by two vertical planes of fanned cables that are anchored to back spans.

The use of a torsionally stiff structural steel box girder proved an economical means of supporting the concrete walkway. Andersons explains that torsion is the condition of stress or deformation of a component caused when one end of the object is twisted in one direction and the other end remains motionless or is twisted in the opposite direction.

“This design allowed for the unsymmetrical cable arrangement on either side of the deck. The depth of the deck section allowed for a cable spacing of 11,4 m, which thereby reduced the number of cables needed to support the bridge, and in turn reduced the visual clutter which can be caused by crossing cables,” adds Anderson.

Sculpted outriggers were also attached to the box. Anderson highlights that these steel elements illustrate the versatility of steel and created integrated, flowing forms into the bridge’s structure. “These elements were galvanised and painted to reduce future maintenance activities over the highway. In addition, the towers for the bridge were constructed from welded circular sections that taper according to the golden ratio.”

Anderson points out that the bridge serves as a visible marker of the current efforts that are underway to overhaul and upgrade the highways in and around Johannesburg. “In addition to being practical and safe, the bridge was also designed with aesthetics in mind, with the hope that it will be intuitively appreciated,” he concludes.

***Ends***

**Notes to the Editor**There are numerous photographs specific to this press release. Please visit <http://media.ngage.co.za> and click the SMEC link.

**About SMEC**Australian based SMEC has more than 4 000 employees and an established network of over 60 offices worldwide. SMEC provides consultancy services for the lifecycle of a project to a broad range of sectors, which include; hydropower, transport, water, natural resources and environment, geotechnical, mining, tunnelling, urban development, renewable energy, power, government and advisory services and social infrastructure development. Following the Vela VKE merger, the SMEC Group now has over 5 000 employees and an established network of over 70 offices in 36 countries throughout Australia, Africa, Asia, the Middle East, the Pacific, North and South America.

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