

PROJECT AWARDS: WINNERS AND FINALISTS  
CATEGORY: TECHNICAL EXCELLENCE

# Buitengragt Structural Steel Pedestrian Bridge



## INTRODUCTION

The unique Buitengragt pedestrian bridge was sculpted from its circumstances. Out of the technical challenges of the site, the project team created a unique, but simple and aesthetically pleasing structure that blends beautifully into the busy backdrop of the Cape Town city centre.

The bridge was necessitated by the 2010 FIFA World Cup to accommodate the expected increase in pedestrians who would have to cross the five lanes of the continuously busy Buitengragt roadway. Today the bridge is a positive legacy of greatly improved pedestrian linkages in the city.

The position of the structure presented a number of challenges to the design team. Partly founded on top of a buried parking garage and partly on land reclaimed from the sea, the foundation design required some innovative ideas. The fact that the bridge had to fit into a narrow corridor between two of the city's main hotels also influenced the design outcomes. The need to limit the noise impact was a further constraint.

A structural steel asymmetric box girder was not an obvious choice of structural form. It did, however, offer a number of specific benefits. Firstly the use of structural steel significantly reduced the dead weight of the bridge, which had to be 4 m wide. This was important,

- 1 Buitengragt pedestrian bridge in Cape Town – side view of upstand beam
- 2 Main span being lifted into position
- 3 Built-in piers and lift shaft

## BITENGRAGT STRUCTURAL STEEL PEDESTRIAN BRIDGE

**JOINT WINNER – Technical Excellence category**  
**Submitted by the SAICE Western Cape Branch**

### KEY PLAYERS

**Client** City of Cape Town

**Professional Team** Arcus Gibb Engineers; Vela VKE Consulting Engineers; GAPP Architects; COA Architects; Jan Ford Landscape Architects

**Main Contractor** Vusela Construction

**Major Subcontractor** ADM Engineering