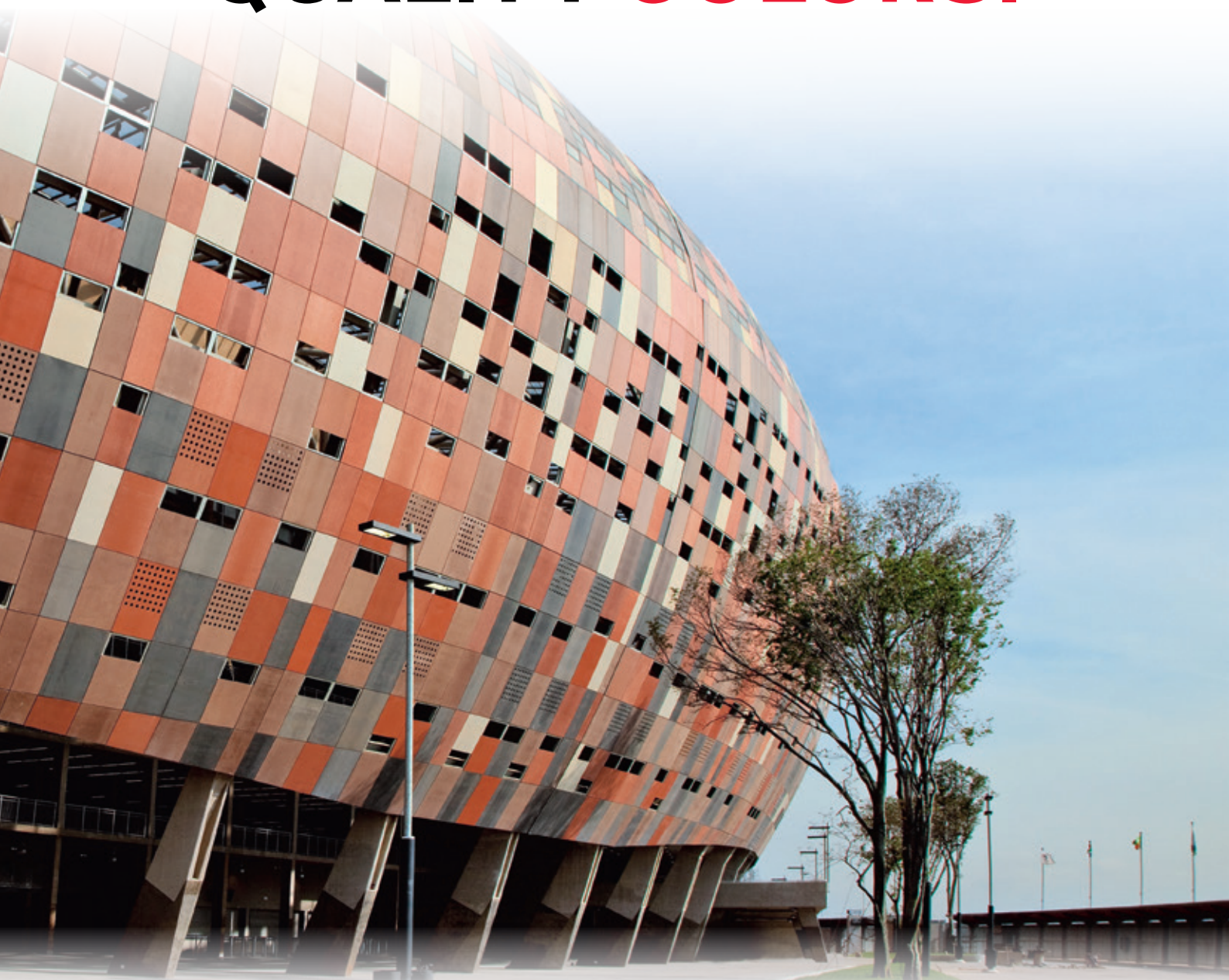


# QUALITY COLORS.



## Case Study

Soccer City Stadium

Johannesburg, Republic of South Africa

**COLORED** CONCRETE WORKS®

An initiative of LANXESS

**QUALITY WORKS.**

**LANXESS**  
Energizing Chemistry

# SOCCER CITY: THE GLOBAL CAPITAL OF SOCCER IN 2010



■ One of the largest soccer arenas in the world. The Soccer City Stadium can accommodate 88,958 spectators.



### **World Cup, soccer history and architecture**

Soccer City, the largest World Cup stadium in South Africa, is more than just an arena for world-class soccer. It's also a shining example of state-of-the-art stadium architecture.

The spiritual home of South African soccer was constructed in 1984 as the "National Stadium South Africa". And in an interesting snippet of sporting history, this is where the final games of the 1996 African Cup of Nations were held – a tournament that South Africa ultimately won. Since 2004, the arena has been known officially as the "First National Bank Stadium".

As part of a massive renovation project that was more or less a complete rebuild, Soccer City was made ready for the World Cup. Working alongside Damon Lavelle of architectural firm Populous, Bob van Bebber and Piet Boer of Boogertman Urban Edge + Partners created a new high-tech façade made of glass-fiber-reinforced concrete coloured with **Bayferrox®** pigments – a design that is setting new standards in architecture. Another architectural highlight is the players' tunnel below the western tribune. With a form akin to a mine-shaft it provides a reminder of Johannesburg's gold mining tradition.

## ONE OF SOUTH AFRICA'S ARCHITECTURAL LANDMARKS



### **A symbol of tradition and the future.**

Although South Africa's largest soccer stadium exudes an air of modernity and internationality, the underlying architectural concept is inspired by the calabash, a very traditional and typically African clay pot. An intrinsic element of African culture, this pot is also a symbol of the melting pot of cultures that Africa has represented since time immemorial. However, it is not just the shape of the stadium that gives the structure its distinctly African flavor. Panels made of glass-fiber-reinforced concrete coloured with **Bayferrox®** pigments to create traditionally African hues transform Soccer City into a unique visual experience.

Built to echo the shape and colour of the calabash, the façade rests on a raised podium known as the "pit of fire", yet another reference to traditional African culture. Nine vertical openings in the façade face toward the other

World Cup stadiums in South Africa. A tenth opening points in the direction of the Olympic Stadium in Berlin, where the final of the 2006 World Cup was played. These openings symbolize the path to the final.

Following the completion of the rebuilding works, the imposing arena has space for 88,958 spectators to cheer on their teams from the ultra-modern tiered seating. A selection of exquisite restaurants and 190 special boxes with 7,466 business seats ensure comfort of the very highest standard.

Both visually and technically, Soccer City has become one of South Africa's newest landmarks and, even without the added draw of the World Cup, is proving a major attraction for visitors from across the globe.



**“ARCHITECTURE THAT REFLECTS THE LOCAL CULTURE COMMUNICATES A SENSE OF BELONGING AND COMMUNITY.”**

Bob van Bebber,  
Senior Architect – Design Director

Boogertman Urban Edge + Partners

Born in 1963, Bob van Bebber obtained a Bachelor's degree in Architecture from the University of Witwatersrand in South Africa in 1991. He has been partner and director of architectural firm Boogertman + Partners since 2000. Bob van Bebber is a member of the South African Council for the Architectural Profession and the Institute for South African Architects.

His partner, the architect Piet Boer, was born in 1977. He completed his studies of architecture at the University of Pretoria in 2000 with a Bachelor degree.

■ Soccer City is the most important stadium of the 2010 World Cup and an outstanding example of scale, innovation, design and technology.



■ An intelligent and innovative façade concept communicates the flair and unique culture of the African continent.



# MODERN ARCHITECTURE WITH AN AFRICAN FEEL

## A high-tech façade in traditional tones.

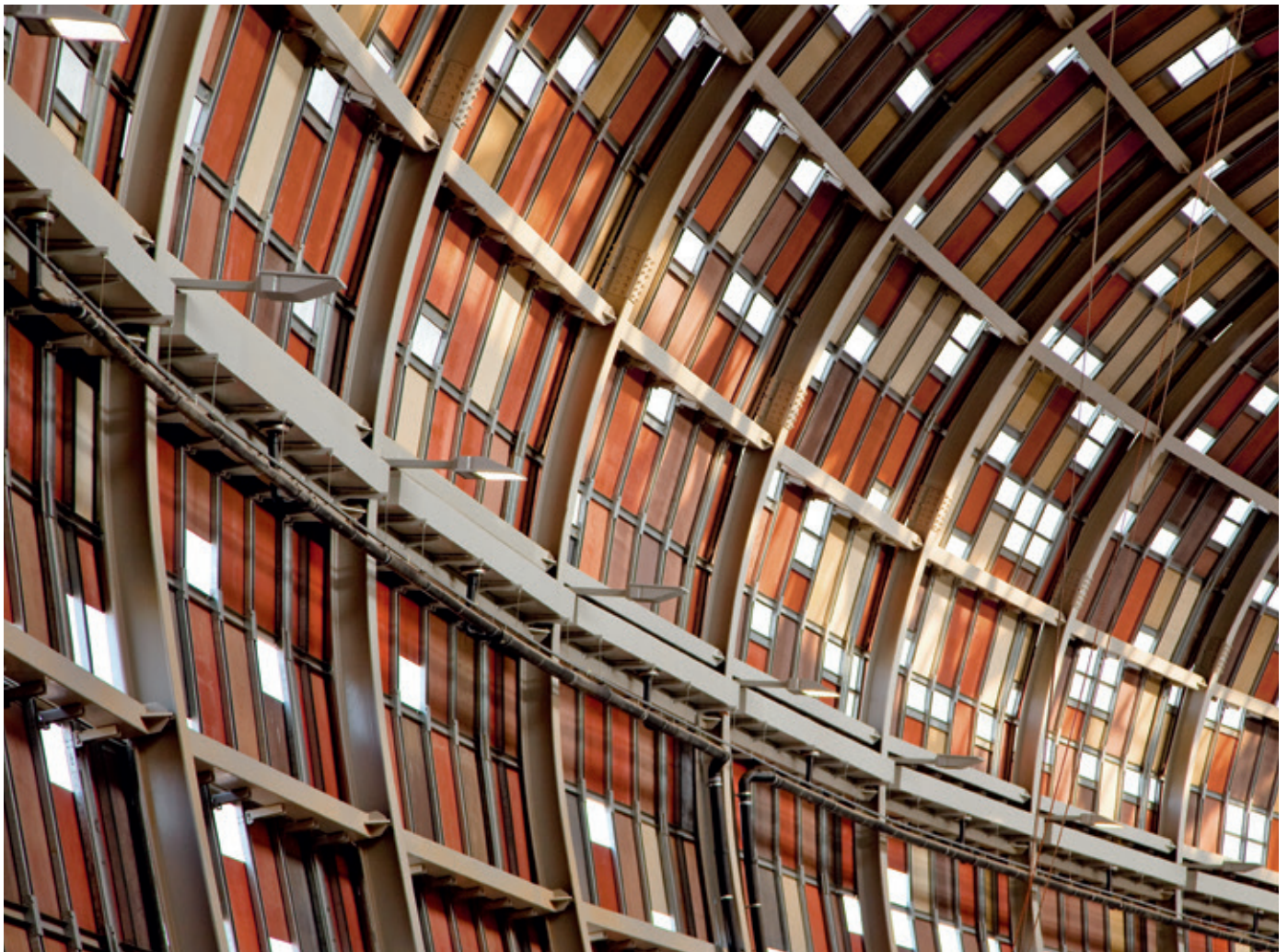
The construction of Soccer City has not only created a brand new landmark for South Africa, but has also set new architectural standards for modern soccer stadiums. Its most outstanding feature is the innovative and intelligent façade concept that impresses on both a technical and esthetic level. It was possible to make this unconventional design a reality thanks to the input of German/Austrian company Rieder Smart Elements, which supplied fibreC elements for the 28,000-square-meter outer cladding of Soccer City.

In total, 2,100 modules each consisting of 16 fibreC panels were used to construct the façade. With their authentic tones

and dynamic surface, the coloured glass-fiber-reinforced concrete panels successfully reflect the architects' desire to create an outsized representation of the calabash pot so typical of Africa. Another key reason behind the decision to use coloured concrete was the climate. Strong winds and dust from the nearby gold mines create a sandblast effect that would be too much for a conventional coating to deal with.

To manufacture the coloured panels, the glass-fiber-reinforced concrete was pigmented with liquid colours from Harold Scholz using the world renowned **Bayferrox®** pigments.

■ 2,100 modules of through-coloured glass-fiber-reinforced concrete form a façade covering 28,000 square meters.





- The unique façade was created using panels of through-coloured glass-fiber-reinforced concrete.



# FOR ADDITIONAL INFORMATION, CONTACT THE LANXESS COUNTRY REPRESENTATIVE.

## Germany

LANXESS Deutschland GmbH  
Business Unit Inorganic Pigments  
Rheinuferstraße 7-9  
47829 Krefeld  
GERMANY  
Tel.: +49 221 8885 3974  
Fax: +49 2151 88 4133

## USA

LANXESS Corporation  
Business Unit Inorganic Pigments  
111 RIDC Park West Drive  
Pittsburgh, PA 15275-1112  
USA  
Tel.: +1 412 809 1000  
Fax: +1 412 809 1059

## Singapore

LANXESS Pte. Ltd.  
Business Unit Inorganic Pigments  
3A International Business Park  
#07-10/18 ICON@IBP Tower B  
SINGAPORE 609935  
Tel.: +65 6725 5828  
Fax: +65 6725 4828

## Australia

LANXESS Pty. Ltd.  
Business Unit Inorganic Pigments  
Unit 1/35 Carter Street  
Lidcombe, NSW 2141  
AUSTRALIA  
Tel.: +61 28748 3910  
Fax: +61 28748 3999

## Japan

LANXESS K.K.  
Business Unit Inorganic Pigments  
Marunouchi Kitaguchi Building 23F  
1-6-5, Marunouchi, Chiyoda-ku  
Tokyo 100-8215  
JAPAN  
Tel.: +81 3 5293 8017  
Fax: +81 3 5219 9776

## Great Britain

LANXESS Ltd.  
Colour Works  
Lichfield Road  
Branston  
Burton-on-Trent  
Staffordshire, DE14 3WH  
UNITED KINGDOM  
Tel.: +44 1283 714200  
Fax: +44 1283 714201

## Brazil

LANXESS Indústria de Produtos  
Químicos e Plásticos Ltda.  
Av. Maria Coelho de Aguiar, 215 Bloco  
B - 2º Andar  
05804-902 São Paulo  
BRAZIL  
Tel.: +55 11 3741 2615  
Fax: +55 11 3741 3933

## Italy

LANXESS S.r.l.  
Segreen Business Park, Palazzo Y  
Via San Bovio n.1/3  
20090 - Milano San Felice - Segrate  
ITALY  
Tel.: +39 0230722644  
Fax: +39 0230724298

## South Korea

LANXESS Korea Ltd.  
9F, Samsung Boramae Omni Tower  
23, Boramae-ro 5-gil  
Dongjak-gu, Seoul  
07071, Korea  
REPUBLIC OF KOREA  
Tel.: +82 2 6715 5100  
Fax: +82 2 847 3295

## Central and Eastern Europe

LANXESS Central Eastern  
Europe s.r.o  
EUROVEA  
Central  
2 Pribinova 6  
811 09 Bratislava  
Slovak Republic  
Tel.: +421 2 3215 1626  
Fax: +421 2 3215 1699

## Spain

Europigments, S.L.  
Business Unit Inorganic Pigments  
Arquitectura, 27  
Polígono Industrial Els Garrofers  
08340 Vilassar de Mar  
SPAIN  
Tel.: +34 937 540 770  
Fax: +34 937 540 784

## China

LANXESS Specialty Chemicals  
Co., Ltd.  
No. 458 Haijin Road  
Jinshanwei Town  
Shanghai, 200540  
R.P. CHINA  
Tel.: +86 21 5284 7860  
Fax: +86 21 6250 0769

## India

LANXESS House  
Plot no's. A162-164  
Road No.27, MIDC  
Wagle Estate  
Thane (West) - 400604  
Maharashtra, INDIA  
Tel.: +91 22 25871000  
Fax: +91 22 25871287

## France

LANXESS S.A.S.  
Inorganic Pigments  
Le Doublon A  
11, avenue Dubonnet  
92407 Courbevoie Cédex  
FRANCE  
Tel.: +33 1 80 46 30 00  
Fax: +33 1 80 46 30 45

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LANXESS Deutschland GmbH  
Business Unit  
Inorganic Pigments  
Rheinuferstraße 7-9  
47829 Krefeld  
GERMANY  
E-Mail: coloredconcreteworks  
@lanxess.com  
www.lanxess.com  
www.bayferrox.com  
www.colored-concrete-works.com

Visit our Internet site:  
[www.colored-concrete-works.com](http://www.colored-concrete-works.com)





## PROJECT DATA

- Soccer City, South Africa's first national stadium, has been renovated to stunning effect.



## Location

Johannesburg, Republic of South Africa

## Architecture

Boogertman Urban Edge + Partners  
in partnership with Populous

## Client

City of Johannesburg

## Project participants

Façade: Rieder Smart Elements GmbH

## Construction period

Façade installation between August 2008  
and July 2009

## Area

28,000 m<sup>2</sup> façade constructed using  
fibreC glass-fiber-reinforced concrete panels

## Volume of concrete

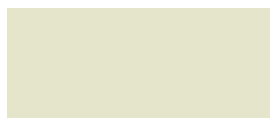
80,000 m<sup>3</sup>

## Colour supply form

Pigment slurry



Liquid pigment preparation based  
on Bayferrox® 350 liquid



Liquid pigment preparation based  
on titanium dioxide pigment



Liquid pigment preparation based  
on Bayferrox® 503



Liquid pigment preparation based  
on Bayferrox® 110



Liquid pigment preparation based  
on Bayferrox® 420



Liquid pigment preparation based  
on Bayferrox® 600