

STEEL AWARDS 2005

OVERALL WINNER

DIAMOND HILL TOLL PLAZA STRUCTURES



In recognising what a little masterpiece this is, our judges overcame their natural prejudice against making an award to another road tax collection point. The architect succeeded in creating an uncluttered clean line solution, which follows through from the otherwise very industrial lighting masts to the unobtrusive safety barriers and the red painted curved feature channel protecting the individual booths.

The highway that runs between Pretoria and Witbank is no longer a seemingly endless stretch of grey asphalt. It now features a modern toll plaza that incorporates the mood and theme of the surrounding agricultural heartland and at night it is transformed into scenery reminiscent of a sci-fi fantasy. The judges of Steel Awards 2005 were unanimous in recognising this architectural vision leading them to award the Diamond Hill toll plaza Overall Winner.

The Diamond Hill toll plaza, a steel and concrete structure, is a far cry from the functional uninspiring concrete canopy solutions we have come to expect over recent years. The new fresh solution has not only captured the imagination of South African travellers and tourists, but it has also set a new precedent in the design of toll plazas in the country. This winner is the product of the road agency's endeavour to create structures that are functional, environment-friendly and visually appealing to South African road users.

Projects architect, Pieter Mathews, of Mathews and Associates Architects says, "The toll plaza was designed according to a modern agricultural aesthetic that captures the mood of the surrounding area."

The plaza comprises of one main ramp toll gate, an administration building as well as eight on / off ramp single station toll gates all consisting of 16 individual booths,



STEEL AWARDS 2005



and 16 light masts. A common feature to all stations is a simple elevated corrugated iron water tank mounted on a rock feature base. However, the toll plaza structures are by design not just secure and functional, the artful use of steel in the design and construction is visually arresting.

The cover over the booths features sloping cantilever roofs tied down with cable stays that create a secure canopy to protect them against wind forces on the

highway. The sloping steel columns, supporting the cantilevers, extend past the roof levels and create additional visual features to distract the attention of a frustrated driver waiting their turn.

The safety barriers of each booth are painted grey and made from double parallel channels positioned at suitable impact levels. In contrast, the red channel feature at each booth is a specially- designed impact bar that protects the toll-collectors from loads protruding from trucks passing the toll plaza.

The leaning light masts are reminiscent of those at the Sydney Olympic stadium. The architect wanted to create a dramatic effect using the masts and so he designed them to be tilted and supported by cables.

The most pleasing surprise comes for those who take the trouble to look south and appreciate the exceptional exposed steel framed administration building. A wide range of cladding materials are creatively used within the surrounding supporting steel structures to the roof and cladding. In all, beautiful detailing, exceptional quality in the finish and final presentation make these buildings stand out as something special and deserving of recognition.

The steelwork for the Diamond Hill toll plaza was fabricated and erected by architectural and structural specialists Omni Struct. The logistics of working on the Diamond Hill project proved challenging as they fabricated the steelwork in their workshop in Industria, Johannesburg and then transported all 300 tons to a central project site where it was stored. As each of the standalone components came on line, they reloaded their trucks and delivered and erected the steelwork.

Alex van Niekerk, project manager for the plaza for South African Road Agency (SANRA) commented, "Concor, Mathews and Associates Architects, Omni Struct and Tolplan have together created structures that make a strong visual impact on South African road users and fit in with the theme of the local environment and we are very impressed with the end result."



JUDGES COMMENT

Diamond Hill Tollgate plaza canopy over the toll booth, administration offices and lighting masts deserved the overall winner's award for their individual and overall team work performances in creating an outstanding example of excellence in the use of steel.

In recognising what a little masterpiece this is our judges overcame their natural prejudice against making an award to another road tax collection point. The architect succeeded in creating an uncluttered clean line solution, which follows through from the otherwise very industrial lighting masts to the unobtrusive safety barriers and the red painted curved feature channel protecting the individual booths.

This safety barrier solution stands out in a new league when compared to older tollgate structures with what appear to be ad-hoc safety barriers commonly found in the approaches.

But the special surprise is found in the architectural solution to the administration building along side the plaza. Extensive use is made of neatly detailed exposed steelwork around the cladding of the building. Steel grating used in sunscreen and security external cladding is mixed with glass, stone, brick and plastered finishes to create this little gem.

The pleasing solution is carried through to the minor off ramp installations with great effect.

project team

Developer:
N R A

Architects:
Tolplan / Peter Mathews Et Associates

Structural Engineer:
Tolplan Consulting (Pty) Ltd

Quantity Surveyor:
Tolplan

Project Manager:
Tolplan

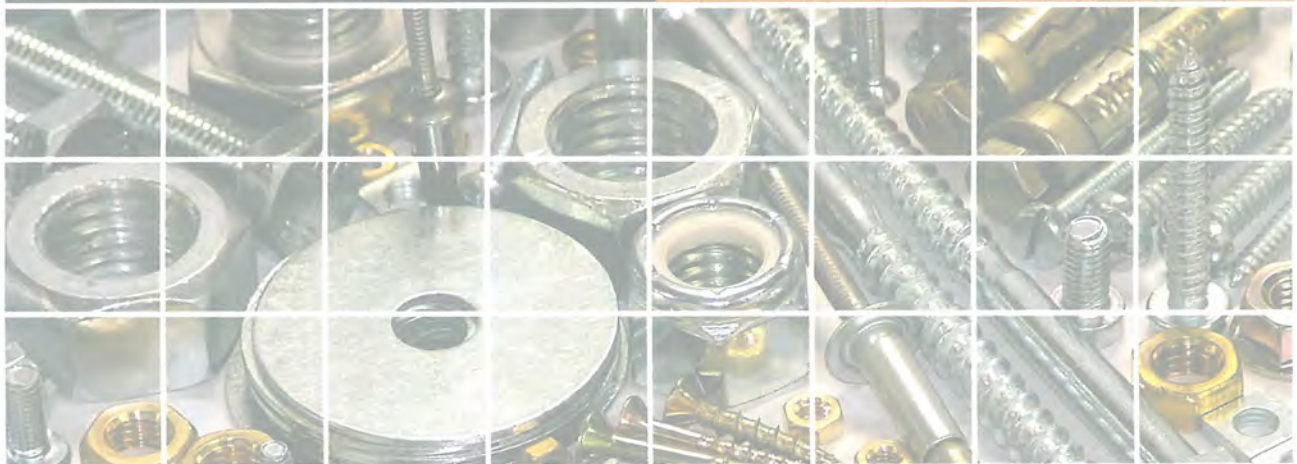
Main Contractor:
Concor

Steelwork Contractor:
Omni Struct cc

Detailers:
Hendrik Groenewald, Chris van Wyk,
Glen Banks

_top of our game

We've expanded our range, stockholding and distribution network to meet the fastener demands of every industry



OUR RANGE INCLUDES

- Tex screws • Rivets • Machine screws • Expansion bolts • HT bolts & set screws • HT/MS nuts, Nyloc nuts
- Washers • MS bolts & set screws • Self tapping screws • Threaded rod



A division of Bearing Man

BRANCHES

Durban Tel: (031) 579 3111 • Fax: (031) 579 3376
Cape Town Tel: (021) 551 2930 • Fax: (021) 551 2950
Johannesburg Tel: (011) 613 1993 • Fax: (011) 613 8926