

WELCOME TO THE MACHINE

Barloworld Equipment's head office and showroom have a bold industrial feel that plays homage to the cool cats they accommodate

BY GLYNIS HORNING







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he brief was certainly monumental... Barloworld Equipment, dealer for Caterpillar, was leaving Sandton and wanted a state-of-the-art head office on the R24 at Isando that reflected its corporate identity and accommodated staff in comfort. But beyond that, it wanted the development to include a flagship Caterpillar showroom for its earthmoving equipment – excavators, loaders, dozers and graders that build the nation’s roads, dams, harbours and airports, and are usually too big to house indoors except in barn-like servicing warehouses, out of the spotlight.

‘This is the first showroom in the country dedicated to heavy earthmoving equipment,’ says Aashen Laloo, development manager at Eris Property Group. ‘The brief to Paragon Architects was to balance iconic design with functional aesthetics while maintaining a cost-effective solution.’ Paragon, of course, was up

IMITATION GAME

The shape of the buildings is reminiscent of the circular tracks of a Caterpillar earthmover

for the challenge – it is the design power behind some of the most advanced buildings in the country, reaping awards for the likes of Sasol Place, Alice Lane and 140 West Street.

The team’s approach to Barloworld Equipment was both simple and singular. ‘Who hasn’t played with toy earthmovers as a kid?’ says architectural technologist and project leader David Cloete. ‘We wanted to hero the equipment. And it may sound corny but some of the best ideas came when we bought a set and played with them while brainstorming.’

It began with what has become a Paragon signature: the two-tower building linked by an atrium, and brought it down to earth to conform to the height restrictions of a site close to OR Tambo International Airport. The result was two long, low structures – one three-storey, the other two-storey, for both offices. Then, taking



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inspiration from the circular tracks of a classic Caterpillar earthmover, they turned them into what Cloete calls ‘two bubble shapes’ – striking glass-walled edifices, floating on a low podium above a semi-basement parking level, and linked by an enclosed glazed-glass bridge, covering 4 500 m² all told.

The separate 3 200 m² showroom bubble was built to face directly onto the busy R24 – creating the ultimate traffic stopper, commanding attention with its arresting shape and the machinery that inspired it displayed inside in two sections, one for track Caterpillars, the other for those with tyres. Beyond this lie the company headquarters: two floors of flexible open-plan office space with sophisticated floor-to-ceiling flush-glazed windows.

It was an ingenious solution but hard won. The challenges began with the very earth the structures

stand on, which is the clay variety and notoriously unsteady, especially after torrential Gauteng rains – ‘not ideal for building foundations’, as Cloete puts it. ‘For a high-rise like most of our projects, you need to dig deep. But because we were only going up three storeys, we dug just three metres below the surface and laid man-made sub-surface to compact the soil beneath a raft foundation. It needed to support all that Caterpillar equipment, and the biggest pieces weigh up to 60 tons.’

The next challenge was the dimensions of the showroom and how to move the equipment in and out. ‘It requires massive clearance in height as well as width to turn one of these mammoths,’ he says. Paragon took for its starting point the roller shutters used to access the Caterpillar servicing warehouses. ‘But we wanted to use glass, not metal.’ So in what they believe is a world first, they elected to vertically slide a 8.4m by 5.5m section



PROJECT 01

of the high-performance glass frontage upwards, using a complex motor system, installed upstairs and hung from a structural beam.

The challenges didn't end there. Architecturally, the only straight feature in the bubble structures is their glass frontage, and Paragon needed to achieve curved roofs and sides that sealed with the straight lines to make the structures weather-proof and insulate them thermally.

Here, again, the solution was deceptively simple. 'Good old corrugated iron,' says Cloete. 'I love its connotations of industry and farms, where Caterpillar has its roots, with its creation of dams and factories. It worked spectacularly and also helped bring in the project on budget.'

A steel girder framework was created to provide for the track-shaped design of each of the buildings, with large spanning trusses that carry the roofs, all sitting on a specially devised grid ('increased to 12m or 15m', says Cloete) to accommodate the different-sized equipment required. Then the corrugated iron was applied like an external skin.

Throughout it all, Paragon worked closely with Trencon Construction, the main contractor. 'We operated as a team, which was of paramount importance given the intricacies of design combining the use of glass and steel,' says Trencon

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BUILT TO LAST

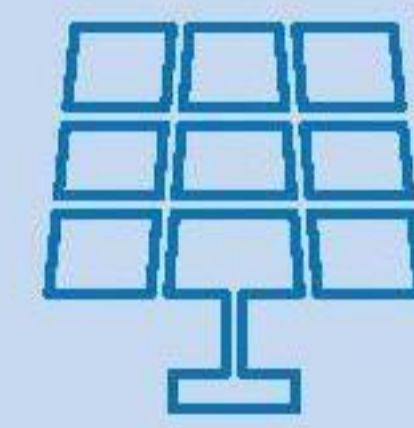
Barloworld Equipment's head office and showroom bring in green touches



The campus was constructed **facing north to reduce energy** requirements



A 3.5m **cantilever** provides **shade** in **summer** and, in **winter**, maximises **heat**



The **roof** structures for the buildings were **designed to cater** for **PV panels**



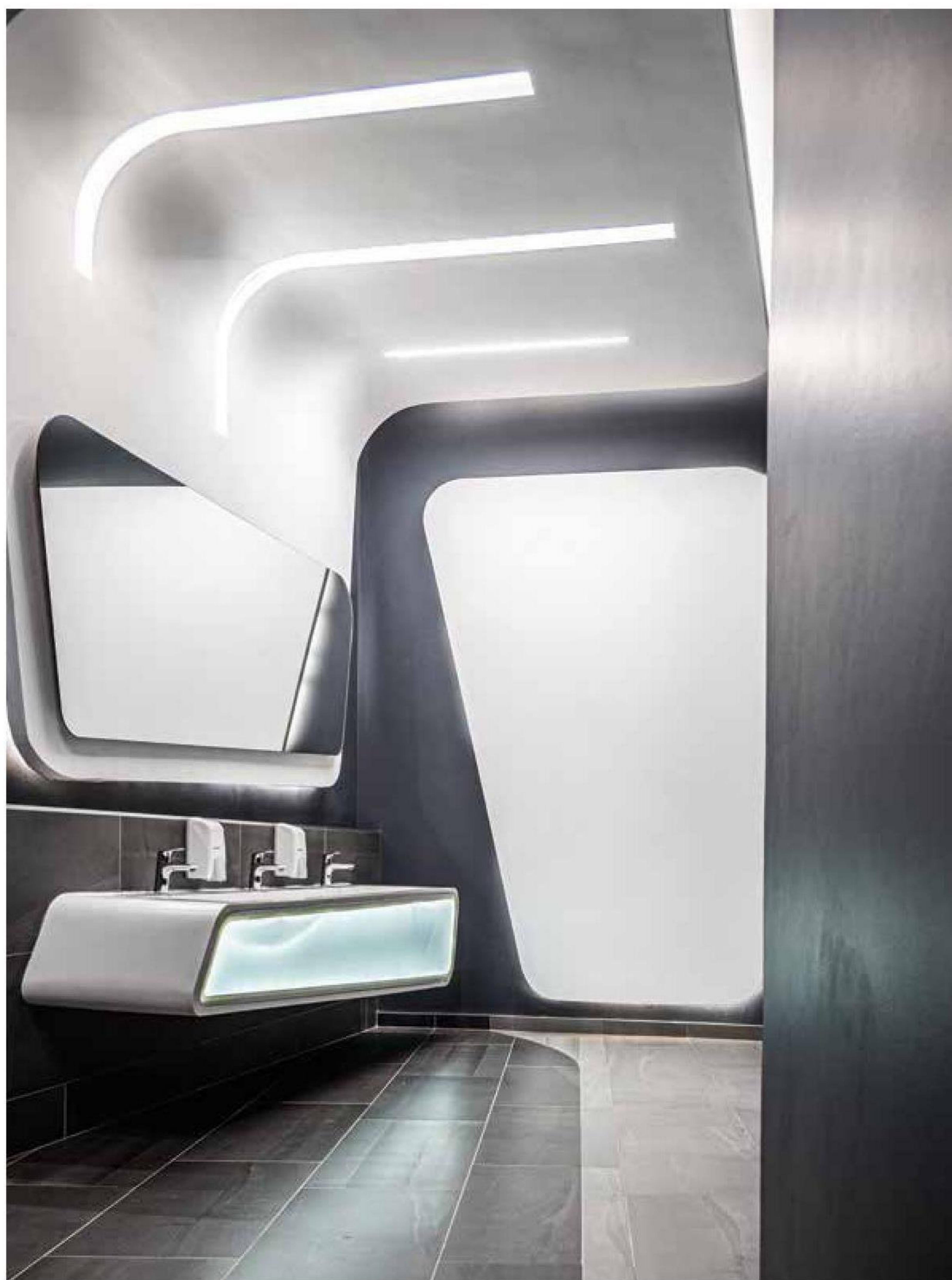
Low-rated **sanitary fittings** were **specified** throughout for **minimal water** consumption



‘A structure that can proudly stand as the first of its kind on the continent’

contracts manager Ernst Bezuidenhout. The steel structure was difficult to manufacture and erect, and they used tension cables in the roof structure to help with the installation of the glass and to adjust the fit of the facade panels.

Although the developers were not targeting a Green Star rating, Paragon practices ensure all its projects would qualify for at least three Green Stars, says Cloete. ‘So we oriented the two buildings to face north to ensure maximum sunlight, and minimise the need for artificial lighting and heating. And we designed the roof structures to cater for photovoltaic panels for solar power, to feed the electrical requirements for the offices.’



The flush-glazed unitised glass facades feature performance glass, and the canopies formed over these by the roofing have a sizeable 3.5m cantilever (another Paragon signature), that provides shading in summer and heating the interiors naturally in winter.

Green concerns were also top of mind for the landscape architect, Karen Marais of the Ochre Office, who helped the architects work around several yellowwood trees on the site, and has focused on indigenous plantings and waterwise plants. ‘The landscape was relatively simple and the planted areas quite small, as much of the site is taken up by the building and the driveways for the monstrous equipment,’ she says.

‘We worked closely with David to squeeze in greenery wherever we could but of course we had to compromise, as the movement paths of the equipment and the views on to the showroom from the highway needed to be given priority. David was brilliant in his planning, though – he managed to allow gaps for planting under the external canopy as well as internally in the showroom.’

‘Planted slots also break the walkway and parking surfaces, and help bring down the volumes to a more human, approachable level – the buildings and machines can be intimidating.’

Importantly, says Marais, the brief was to focus on softening a visitor’s experience. ‘So we planted to surround the visitors’ parking area and extended

the planting along the pathway that leads to the showroom. David also cleverly kept the granite blocks that were there and even introduced some more in the external showroom. They vary in size up to 3m by 4m and are magnificent. They provide a strong aesthetic that relates to both the equipment and the work they do, tying the look back to the landscape in a fun and interesting way.'

Inside, Marais brought in Ficus benjamina trees 'to provide verticality within the space', underplanted with Spathiphyllum, Ficus vivian and Schefflera – 'rich, hardy planting for the indoors'. Outside, under the shaded canopy, she introduced a grassy mix of shade planting – Setaria megaphylla and Chlorophytum bowkeri.

'We kept trees wherever we could and added Celtis africana. Surrounding the parking area, we adjusted the driveway and parking to accommodate the existing yellowwoods, and then introduced Olea and Celtis, which will grow to provide shade. We also managed to retain an existing cluster of Ehretia and aloes, planting around it with grasses, restios, succulents and a flowering mix. The established result should look natural, soft and wild.'

The developers could not be more pleased. 'The team behind this development has delivered on all fronts but principally with a structure that can proudly stand as the first of its kind on the continent,' says Laloo. 'Eris measures the success of a building by the end-users' experience, and all feedback points to this being one of the shining examples of how one can challenge the norms and create structures that are functionally world class.'

'The curved steel showroom is truly a marvel to behold, especially up close, with the contrast between the dark steel and yellow equipment creating a spectacular statement for Barloworld and its clients. Even the details are telling, like the chamfered columns that look like fat-head screwdrivers, which I like to think keeps with the industrial theme.'

At Barloworld's 100-year anniversary back in 2002, Nelson Mandela famously described Barloworld and Caterpillar as 'the builders of our economy', helping create the network of roads linking places and people, and harbours and airports linking SA and the world. Their new head office and showroom capture the weight and import of that – but seemingly as lightly and naturally as a child playing with a favourite toy, creating and shaping environments, and building nations happily in their head. 🌱

PHOTOGRAPHY PARAGON GROUP

SOURCEBOOK

PROJECT BARLOWORLD EQUIPMENT



OWNER

Barloworld Equipment
www.barloworld-equipment.com

DEVELOPER

Eris Property Group
www.eris.co.za

ARCHITECT

Paragon Architects
www.paragon.co.za

PROJECT MANAGER

SIP Project Managers
www.sippm.co.za

MAIN CONTRACTOR

Trencon Construction
www.trencon.co.za

MECHANICAL ENGINEER

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