

SLIVER OF SUCCESS

The Edge makes the most of its positioning – a wedge-shaped piece of land on the banks of a water-filled former quarry

BY HENRIETTA ROSE-INNES



PHOTOGRAPHY ANDREAS EISELIN/Himages



It's an imposing sight: a glass-clad, nine-storey commercial building perched commandingly on a corner plot on busy Carl Cronje Drive in Cape Town's northern suburbs. The tall, distinctively curved facade gleams above the traffic heading up the rise towards the entrance of the Tyger Falls precinct.

This, however, is not the usual corporate monolith of glass and steel. In the interesting textures and colours are hints that this building has a different philosophy to many other commercial properties in surrounding Bellville. On the road side of the building, the verge is softened by a strip of indigenous groundcover, shrubs and trees, with walkways that invite passers-by.

On its water side, the setting is strikingly different, almost maritime: a few steps across a wooden boardwalk, and you're almost in touching distance of kayakers skimming past, doing laps on the manmade lake – in an old quarry – as pairs of geese observe. There's a long view across the water to gleaming white apartment blocks that back up against the towering quarry wall, complete with waterfall – gushing dramatically in the aftermath of recent rains. It has an almost science-fiction feel: an idyllic, futuristic city. This is the Edge.

Developed by Omnigro, the property was recently acquired by Capitalgro, which saw an opportunity to attract high-end tenants who want

to provide their employees with 'an environment that recognises the long hours they frequently commit ... a bona fide "live, work, play" environment', as Capitalgro chairman Gary Fisher describes it. It opened to such tenants in 2015 – unveiling a landmark of green design, and earning a 5-star Green Star rating from the Green Building Council of South Africa (GBCSA).

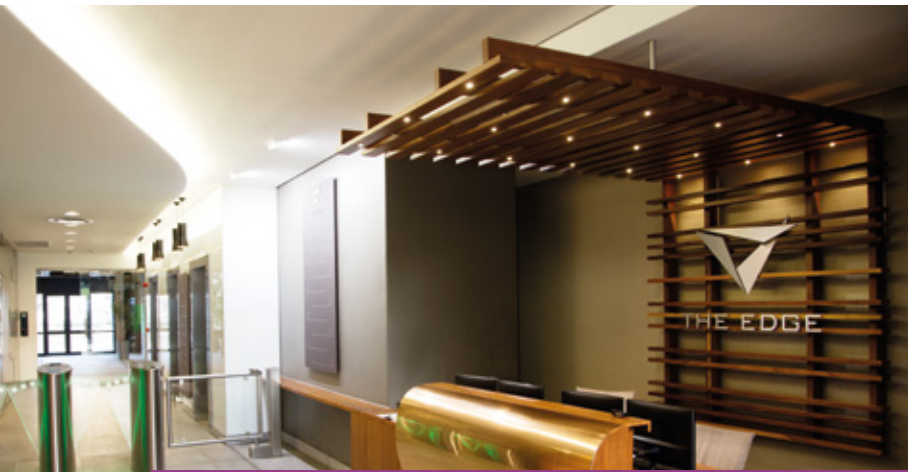
It's acknowledged as 'one of the best, if not the best, green-rated buildings in the northern suburbs of Cape Town', according to Omnigro business consultant Riaan Spence.

Situated in the Tyger Falls growth node, the building is ideally placed for business and leisure. Bars and restaurants line the Tyger Waterfront, and there is convenient access to the N1.

'We were immediately interested in the project because of its unique location and potential for an iconic building,' says Chris Bam of Bam Architects, which was responsible for the design assignment. 'Our vision was to design a building that does justice to the prominence of the site.'

The site seems an unlikely candidate for a super-green development: a disused quarry might be an attractive setting, but it's by no means ecologically pristine; and the precinct is crowded with high-rise apartments and corporate blocks where 'there's not a lot as far as green, sustainable space goes', according to Richard Duckitt of sustainable building consultants Bornman & Associates.

A ROCK AND A HARD PLACE
The Edge is on the last parcel of available land along the Tyger Waterfront: a strip of real estate that is narrow, triangular and surrounded by a road and one-time quarry



GREEN CORE

The Edge was designed with the aim of achieving an excellent rating



A **rainwater** harvesting system can store **120 000** litres of water; all taps and toilets are **water-efficient**.



The **concrete** contains pulverised **fly ash**, reducing embodied energy, and all **timber** is certified, **re-used** or **recycled**.



In office spaces, toilets and parking areas, **movement sensors** control **lights**, **air conditioning**, bathroom **taps** and **urinals**.



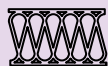
The **lighting system** adapts to levels of **natural light** and **occupancy**. **Electronic blinds** are pre-set to lower at certain times.



The use of the **quarry water** for both **heating** and **cooling** reduces peak **energy consumption** by as much as **75%**.



Parking is allocated for eco-friendly vehicles. **Bicycle racks** and **showers** encourage employees to cycle to work.



Excellent overall **insulation** is made possible with **high-performance** double **glazing** and **insulated** spandrel panels.



In the building's **lifts**, an energy **recovery** system recoups energy generated by **braking**.

Specific challenges arose regarding the size and shape of the plot. The last parcel of land to be developed on the Tyger Waterfront, it is triangular and unusually narrow, confined between the quarry and Carl Cronje Drive with not much room to spare. The challenge lay in 'extracting the best possible use and functionality from this ... very special building', says Bam. This included finding ways to incorporate a parking layout in an area where parking is notoriously hard to come by. The genius of the design, however, was in turning these constraints to its advantage.

Landscape architects were included early on in the process: OvP Associates' brief was to incorporate, not only complex irrigation, but 'footing for columns, anchoring for the boardwalk system, services, bedrock and an open storm-water canal' – a multifaceted endeavour that required very careful planning. The road verge was planted with water-wise indigenous vegetation, featuring stone similar to that originally mined from the quarry. In the narrow space allowed, the landscapers managed to create a garden that encourages people to 'walk through it, pause and sit in public or private spaces ... comfortable outdoor environments for both pedestrians and those occupying the building'. These efforts were recognised in 2015 with an award for excellence from the Institute of Landscape Architecture in South Africa (ILASA) for OvP's Darryl Pryce-Lewis and Yvette Anderson.

From the start, it was determined that the building would be based on a core of sustainability. In line with international trends, Spence explains, the developers resolved to 'go green'. And this they did with gusto, bringing in Bornman & Associates to work with the architects and engineers to facilitate the greening of the site.

The building is replete with a multitude of eco features, including remarkable water-saving and rainwater-storing capabilities – reassuring to tenants in these Day-Zero times – as well as outstanding energy efficiencies.

One aim was an excellent GBCSA rating. Increasingly, tenants are aware of green concerns, and demand these assurances: 'Any building designed without a rating today is essentially obsolete, in our view,' says Bam. Attaining the 5-star Green Star rating was a considerable accomplishment, a first for the area – and also translates into considerable savings. The real benefit, adds Fisher, 'is in the energy and other operational savings



that are passed on to the tenants, resulting in an increasing return over time’.

More than anything, it’s the close proximity of the water-filled quarry that challenged and inspired the planners. As Duckitt says, ‘everything revolves around the quarry’.

This situation created unique problems: not least, the water threatened to flood the construction site. ‘We effectively dug a basement below the water surface level and relied on a thin rockface to prevent water from flooding the basement,’ says Bam.

However, it was this – the site’s trickiest feature – that also allowed for the building’s most innovative eco-friendly feature, which really defines the entire project.

Water used in the Edge’s HVAC systems is drawn from the quarry, filtered and then circulated through the building: cold water from the depths for cooling in summer, and warmer water from closer to the surface for heating in winter – effectively running on ‘free’ cooling for extended periods of time.

Duckitt says this is similar to the seawater cooling systems used at the V&A Waterfront, but more versatile – seawater is perennially too cold to use for heating, whereas the two-tier pumping system at the Edge can be functional all year round.



THINKING AHEAD

The design has been tailored with future tenants’ needs in mind. For their part, the occupants have responded positively to the green ethos of the development



The tranquil water channels weaving through the landscaping are not just elegant features, but an integral part of this circulatory system. ‘In the summer, water that exits the systems will be a few degrees warmer than at the entry point and too warm to be circulated directly back into the quarry,’ say the landscapers. The outdoor water features oxygenate and cool the water, which is channelled back to the quarry via an 84m-long ‘leivoor’ (irrigation ditch).

One result of this innovative system is that, remarkably, the filtered, disinfected water is substantially cleaner going back into the lake

SOURCEBOOK

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www.capitalgro.co.za

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than when it came out. As Duckitt explains, ‘the building cleans the water body; it has a positive impact – it’s the only active cleaner on the lake’.

A holistic environmental philosophy is carried over into the ways that tenants make use of the building, which is designed to inspire eco-friendly habits. ‘Our philosophy is to encourage activity and healthy lifestyle changes,’ says Spence. Bicycle racks and shower facilities support employees who want to cycle to work – though admittedly, the racks are not yet as fully utilised as had been hoped for.

‘We also have a trolley serving various tenants in the building with healthy foods, and Virgin Active is within walking distance.’ There’s even a manual for the tenants, setting out procedures for dealing with a green-rated building.

So far, tenants seem to be eager to comply too. ‘We’ve had an overwhelmingly positive response to the building,’ says Bam. ‘And the corporate tenants have responded in kind by designing really innovative office fit-outs to match the building shell.’

There is a special satisfaction – as one senses the non-potable water gently sluicing through the building, growing cleaner – in working in an environment that’s not only conducive to one’s own health and productivity, but that’s making a contribution to the health of the world at large. ♻️