



Lighting an icon

Probably the most talked about building in South Africa this year, the new Discovery global headquarters in Sandton has become the largest new build project to date to receive a 5 Star Green Star rating by the Green Building Council South Africa (GBCSA).

Discovery's new head office is a bold architectural statement at Sandton's highest point. The building's form is approximately 147 000 m² and its carefully sculptured interior spaces are intended to foster an environment of creativity, innovation and collaboration.

The architectural concept is realised as two sunlit atria which are connected by a multi-storey circulation concourse – the hub, where staff and visitors enter the building and engage with it vertically and horizontally. Lifts and escalators are accessed directly from the concourse connecting the office wings. The expansive ground floor accommodates Discovery's retail partners, client services, walk-in centre, staff restaurants and coffee shops. The

various office levels are set out between the active ground floor and Discovery's Vitality level on the roof.

"The client wanted a building that would architecturally describe them as a brand and as a company, and try and capture some of their ethos," explains Alasdair Forsyth from the architects, Boogertman + Partners. "A big part of it was efficiency; previously they were in four disjointed buildings in Sandton and it was impacting on their ability to effectively do what they had to do. I think a reason for the success of the scheme is the massive floor plans; including Phase 2, it's 12 000 m² a floor and we have eight of those. For the same bulk we could have built a 30 storey tower, but that wasn't what they wanted."



The entire ground floor is open to the public, so clients, passersby and people from neighbouring buildings can simply walk in from the street. Crucial to the success of the concourse is that it can be reached from the pavement without having to scale stairs or encounter barriers. It was conceived of as a space reminiscent of a train station or other public urban space. The ground floor is filled with around 20 shops and restaurants, from Woolworths and Clicks to a home affairs office and a pet shop. In the first week of opening, the restaurants were serving 700 meals a day to non-inhabitants of the building, illustrating a need and appetite for these kinds of spaces in the Sandton CBD. There is a gym, running track, yoga decks, and multipurpose courts on the landscaped roof, all in line with the insurer's Vitality programme that advocates an active lifestyle.

Underpinned by Discovery's core values, ambition and purpose, the building is centred on occupants' wellbeing and incorporates various sustainability strategies for energy and water efficiency, occupants' comfort, responsible use of materials and limited emissions.

Scale

The sheer scale of the building can sometimes be underestimated. To put it into context, a Boeing 737 could be suspended in the west atrium of 1 Discovery Place without it touching sides, and early publicity noted that it was 'the largest single-phase commercial office development in Africa.' The project has 4 km of aluminium balustrades, 4 500 LED downlights and 50 000 m² of tiling.

Lighting challenges

Brand van den Heever from Claassen Auret Electrical and Electronic Consulting Engineers, the lead electrical engineer on site, says that projects of this size do not come along very often. "With almost 110 000 m² of office space, along with 200 000 m² of basement, this project was twice the size of the biggest building we worked on previously.

"The architects were the driving force for the lighting design of the building. They came up with the concepts for each space and we found suitable light fittings for them. Frequently, there was some negotiating and concept changes because, often, many of the fittings had to be imported, which we



simply could not afford with current exchange rates. Therefore, we tried to find local manufacturers who could give us the same product," he explains.

When working on a project with so many different zones and lighting requirements, Van den Heever says it is necessary to work through the project in "bite-sized chunks." For instance, "We workshoped the entire podium, got certain concepts in terms of what streetlights would be needed, and proposed a bollard which the architects thought was too old-fashioned. We then found a sliver fitting from Regent Lighting Solutions (RLS). Once we finalised that, and everyone was happy, we moved on to the next area. But, you'll find a number of the same fittings on the roof as well. There we had a custom light manufactured by RLS because there is an almost 600 m running track on the roof for which good lighting is essential, but at the same time it cannot be visible from the street." As standard footlights do not give the required 2 m throw, and a light every 500 mm was not feasible, Claassen Auret developed and tested a custom-made fitting with RLS. "We tested it on site and showed it to the developers until we found something that worked and which we turned into an actual fitting."

"That sample became one of our façade fittings," notes Byron Lottering from RLS. "We experimented with different lengths and different beam angles, as well as the diffusers and the housing until the client was happy, and through that process, it became one of the fittings we use to wash an external wall with light."

"On the roof there is a multifunctional court for volleyball and netball," continues van den Heever. "There we went with another RLS fitting, the Boda – it's a fairly cost effective, high output LED fitting with a long lifespan, as there is no need for frequent lamp replacements as they are 6 m up."

He explains that the roof also features a few 'garden spike' uplights to enhance the look and feel, and in the executive bar area, a 7 m u-shaped linear to highlight the bar area.

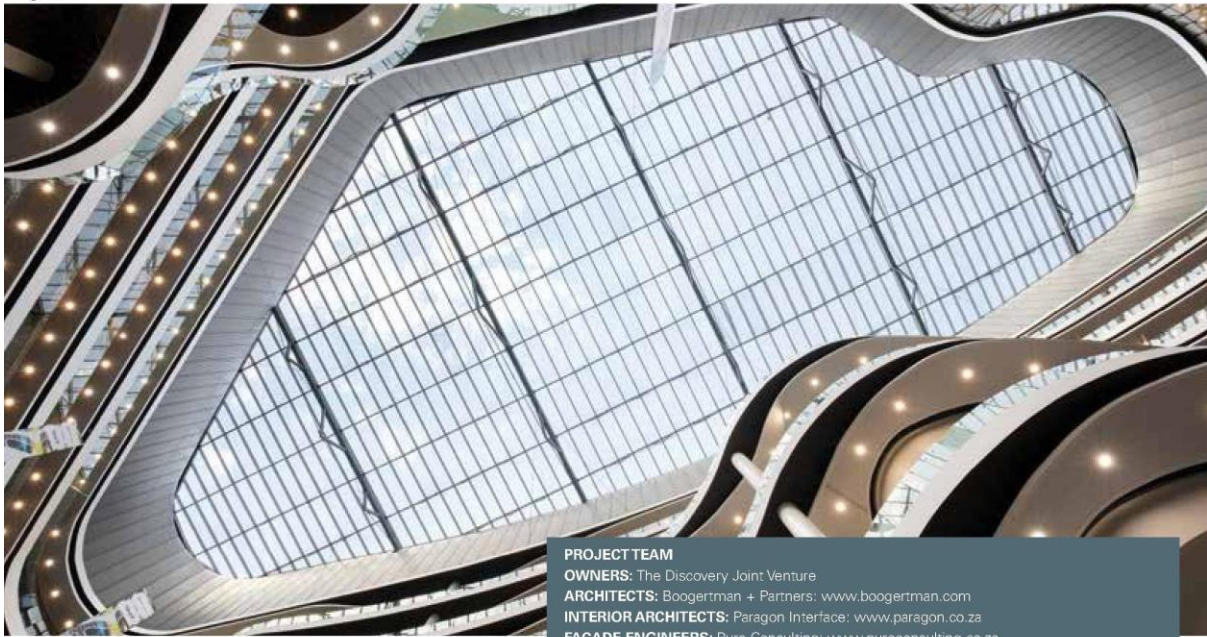
"There are probably around 20 000 light fittings in the building, if not more," says van den Heever. "Luckily we had clients who realised the value of lighting – between Zenprop and Growthpoint, the two developers, they have a lot of experience so we had informed clients – who knew what worked, what was reliable, and were familiar with the roleplayers and suppliers in the industry. Ultimately for a building like this, a lot of thought, development and proposals go into it, even before we get to the stage where we pick the light fittings. We then try and marry what looks nice on paper to what can work in the real world, which is always a bit of a compromise. We had a lot of input and worked very well with the architects and the suppliers to get to where we are today."

He explains that at this stage, six months after Discovery moved its staff across, they are yet to see any major failures. "We haven't had to revisit any of the external light fittings, although we have added two 'street-type lights' at the entrance and have supplemented lights here and there as people started working in the building – to accentuate certain elements – but it's been really minor if you look at the bigger scheme of things."

From the suppliers **Regent Lighting Solutions**

As an experienced contributing supplier for this remarkable project, we were commissioned to supply both interior and exterior energy efficient luminaires as well as custom manufactured fittings.

Our in-house manufacturing capabilities enabled the development of a unique fitting for the rooftop running track with a motion sensor that would



PROJECT TEAM

OWNERS: The Discovery Joint Venture
ARCHITECTS: Boogertman + Partners: www.boogertman.com
INTERIOR ARCHITECTS: Paragon Interface: www.paragon.co.za
FAÇADE ENGINEERS: Pure Consulting: www.pureconsulting.co.za
ELECTRICAL ENGINEERS: Conscious Consulting: www.conscious.co.za
& Claassen Auret Inc: www.cai.co.za
QUANTITY SURVEYORS: RLB Pentad: www.rlb.com
LANDSCAPE ARCHITECTS: African Environmental Design: www.aedlandscape.co.za
MAIN CONTRACTORS: WBHO: www.wbho.co.za & Tiber: www.tiber.co.za

achieve the required output levels, meet all ingress protection ratings and comply with the design style requirements of the building.

All street lighting and pedestrian walkways surrounding the building as well as the roof-top running track, sports fields and landscape areas were specified for this project. Our ability to offer an end-to-end lighting solution, from design to after sales service capabilities, as well as our knowledge and experience in the lighting industry ensure our clients' unique lighting objectives are met with peace of mind.

Fittings used:

Interior lighting: Linear Mini surface mounted 24W/M 4000 K LED; Linear Maxi Recessed 10.5 m; Luxon Square Recessed 40 W LED 4000 K; Jura 1001 4000 K LED; Jura 1002 30 W LED; and Bali Spike 4.8 W 3000 K in all landscape gardens.

Exterior lighting: Sliver 1.8 m plinth 42 W LED 3000 K; Piazza post top single 48W 24 LED 4000 K; Piazza pole 5 m mounting height; Tula 2 wall mounted 4000 K LED Black; Shuttle wall mounted 18 W LED 4000 K; Istria Trunion mounted 72 W 36 LEDs 4000 K; and Boda Floodlight 200 W LED 5000 K.

G Light

G Light and LumenArt joined forces after being invited by Claassen Auret Incorporated to submit proposals on lighting and lighting controls from the initial concept of the Discovery building. We worked closely with the electrical engineers and contractors to design, supply, install, commission and hand over the project.

All the open plan office areas were required to have LED luminaires, with an average of 250 Lux, while the general offices required an average of 250

Lux with sensor control. The boardroom required 300 Lux average controlled via DALI and BACnet, which were connected to the building management system, allowing full integration to room booking systems, access control, window blind's control, audio visual, video conferencing, HVAC and dimming of luminaires for best results. Outdoor façade lighting was a specially designed Neon Flex that would allow Discovery to stand out from other buildings in the area.

As with any project, working hand-in-hand with the hundreds of other contractors on site sometimes caused confusion. However, this project was handled sufficiently well by a professional team and all hand over dates were reached. Although the implementation of new technologies was challenging, after the initial installation started, the understanding and implementation ran very smoothly.

Fittings used:

600 x 600 LED panel x 6156; 1-Way gear x 331; 2-Way gear x 705; 3-Way gear x 329; 4-Way gear x 799; 6 W Downlight x 1542; 6 W DALI downlight x 654; 12 W Black downlight x 141; 12 W Black DALI downlight x 32; 12 W White downlight x 2153; 12 W White DALI downlight x 72; 18 W White downlight x 3207; 18 W White DALI downlight x 23; Façade neon flex x 1720 m; LED lift lobby x 27; Benches x 5; Staircase linear x 243; Coves, wall cladding and lift lobbies x 6000 m; Auditorium x 250 m LED tape light; Decorative cladding lighting: >9000 m; Daylight harvesting sensors: >2000 sensors; DALI Room Controllers: 139; Multi-technology occupancy Sensors: 139. ^{LID}