

## A first for South Africa as video and lighting blend at Rosebank Link

Opposite the Gautrain station on the Oxford Road thoroughfare, the iconic Rosebank Link building features the future of display advertising. Billboards on the sides of buildings are nothing new, but in the past they have always been added after the fact. Thanks to a collaboration between Paragon Architects, the building owners and digital display services company Primary Colours, the Rosebank Link now features a dramatic 124 sqm full-colour LED video screen that has been custom-designed and engineered to be an integral part of the building's fabric, and to contribute to the edifice's striking appearance.



The installation features two distinct elements. The first of these is the LED screen, which is noteworthy for being one of the largest in South Africa. The second is the strip screen display that forms part of the building's exterior lighting. The largest of its kind in the country, the strip screen display can be controlled and manipulated remotely. Rather than being composed of individual lights, it is made up of narrow strips of video screen. "Using new DigiLED technology, we've been able to create an exceptionally flat screen that offers maximum viewing angles to pedestrians and drivers using this major city artery," explain Primary Colours directors Ashendra Singh and Grant Neill. "With no off-angle colour shift, the new screen offers advertisers a way to tell their stories in the most impactful way possible," they add.

With HD 720 resolution and the ability to display 16 million colours, the complete screen measures 18 m wide and 7 m high (1 728 pixels wide x 745 pixels high). Geometric-pattern cladding was used to underline the fact that the screen is an authentic part of the building's fabric. While the screen itself represents cutting edge technology, it is arguably the building's strip lighting (attached to the Rosebank Link via watertight perforations in the building façade) that is the most exciting aspect of this project. Most impressive when viewed at night, the ribbons of coloured video displays are designed to reflect from the building's edges, giving a more harmonious wash effect.

This smart lighting has a total length of 226 m, and stretches across 15 floors of the building.

### **Initial concept**

The original concept for the building included a screen and the architect came up with a basic sketch and sent it to Primary Colours. "The architect had drawn the screen in the shape it is now, and everyone was saying that it wouldn't work because it wasn't rectangular," says Neill. "A rectangular screen would not have looked as aesthetically appealing up there, and the budget being put forward wouldn't have paid for it. We re-looked at the costs and in the end the size of the screen was reduced to what it is now." Primary Colours then came up with the idea of tying in the lighting with the content on the screen, and had a sister company, Flying Circus, model the building in 3D, including the screen and strip lighting. "I took it to a client meeting and they were blown away with the idea. The notion of tying lighting into video content isn't as easy as it sounds, however, as there are effectively two video systems running off the same piece of content, taking the predominant colours of the advert and washing the building with them."

Although the architects were initially against the idea, fearing that the building would "look like a Christmas tree," the client pressed on and when it was finally installed the architects were impressed.

### **Technical challenges of the installation**

"The most critical technical problem we had was placing the power supplies and video controllers as they were not IP rated. We had to mount them indoors and take the signal and power cables through the façade," Neill explains. "There are 38 individual control boxes installed through the building from first parking level up to the 15 floor," continues Singh, "and each of them had to be cabled to each other as well as to the control room at the parking level. As the façade was designed to be waterproof – and we were making holes through it – running the cables through waterproof grommets and having the installation signed off by the engineers as being watertight was a bit tricky. To give you a sense of the job, it took two years of work to plan the installation with the engineers and main contractors, while the installation took two months. It is the most complex job we have done to date."

The installation wasn't hassle free either; "The entire lighting display had to be installed using rope access because the paving wasn't yet laid. We trained a team of people to install the lights and sat at the bottom of the building with a pair of binoculars watching them," laughs Neill. "The wiring map was essential at this point as each power supply could run a maximum of 9 m of lights." He notes that future maintenance will also be performed by rope access, "but we don't run the strip lights during the day or at full brightness all the time, so theoretically they could run for 20 years," he says.

Environmental issues, such as LED exposure to UV rays were taken into consideration, and while in certain cases the architects opted for directly viewable lighting, in others the lighting is recessed and used to create a wash over the façade.

The screen itself was bought from a British company, DigiLED, and was chosen for its viewing angles. "It is a very high end LED with additional UV protection," explains Neill.

“It is also very efficient and is equipped with light sensors which detect the ambient light and adjust the brightness to suit the time of day.”

As for the future, the duo believe that the trend of building owners trying to generate revenue from their buildings via screens is set to continue. “It is very difficult to add a screen to a building once it has been built though,” points out Singh. “Luckily architects are starting to design buildings with screens in them from the initial concept. What is valuable for architects is that they are no longer limited to rectangular screens.” Neill believes that Africa is still very far behind, but that there are signs that the market is catching on, “We have just done the first intrinsically curved screen in the country, at Fourways Mall, and I think that digital display technology will become more of a norm as architects see the possibilities”.

### **Architecture**

The project comprises a total rentable area of 18 744 sqm of office area and 1 553 sqm of ground floor retail area. At 15 storeys above ground, the building consists of two basement parking levels, a ground floor public/retail level, five parkade levels, and nine storeys of offices from the podium level.

“The building showcases the corporate values of the client, which we achieved by our finely-honed ability to value engineer and design without the monotony often associated with corporate office design,” says Paragon Senior Project Architectural Technologist Warren Wesson. “As a building standing foremost in the centre of a developing cosmopolitan area, it was important to have a design that served the needs of the client and its neighbours, as well as the public, in a new, exciting, and smart way.”

The east and west façades consist of a composite aluminium-clad shell with articulated strip windows to allow light and views to filter into every office module. These faceted façades have a visual quality emphasised by the articulated strip windows, which transform from day to night. The flush-glazed north and south façades allow for uninterrupted views over the greater urban area of Rosebank.

The backdrop to the façades is a smooth and glossy flat finish that transforms itself into the underbelly of the building. The organic vaulting architecture of the underbelly raises the building from the ground, allowing users to traverse an unimpeded thoroughfare between the Gautrain Station and the shopping area. At the heart of the building is a multi-storey enclosed, north-facing atrium fashioned to capture the sunlight filtering down into the fluid underbelly of the ground-floor thoroughfare. This creates a conduit for a combination of green walls and indigenous planting brought to life in executive roof gardens, podium-level gardens, and parkade wall gardens that allow for a tranquil environment not normally afforded in multi-storey buildings.

Wesson notes that the building has been designed, and will be operated, in an environmentally sustainable manner. Passive building design techniques and environmental considerations will ensure a Four Star Green Star rating, creating a healthier and more productive environment.

### **PROJECT TEAM**

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**ELECTRICAL AND WET SERVICES ENGINEER:** CKR: [www.ckr.co.za](http://www.ckr.co.za)

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**MECHANICAL ENGINEER:** Adaptive Resource: [www.adaptres.com](http://www.adaptres.com)

**GREEN BUILDING CONSULTANT:** WSP: [www.wsp.com](http://www.wsp.com)